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IN THE

Supreme Court of the United States

OCTOBER TERM, 1975

No. 75-1216

NATIONAL ASSOCIATION OF RADIOTELEPHONE SYSTEMS,
Petitioner,

v.

FEDERAL COMMUNICATIONS COMMISSION, ET AL.,
Respondents.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA CIRCUIT

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Respondents.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA CIRCUIT

Petitioner, the National Association of Radiotelephone Systems ("NARS"), respectfully prays that a writ of certiorari issue to review the judgment and opinion of the United States Court of Appeals for the District of Columbia Circuit (the "Court of Appeals") entered in this proceeding on January 5, 1976.

OPINIONS BELOW

The opinion of the Court of Appeals, which has not yet been officially reported,[1] appears at Appendix A to this petition.[2] The Second Report and Order of re-

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[1] The opinion is reported at 35 Pike & Fischer Radio Reg. 2d 1484 (1976).

[2] The appendices are separately bound in a companion volume, hereinafter cited as "Pet. App." The opinion appears at Pet. App. 1a-33a.

spondent Federal Communications Commission (the "FCC"), which is reported at 46 F.C.C. 2d 752 (1974), appears at Appendix B (Pet. App. 34a-134a); its Memorandum Opinion and Order on reconsideration, reported at 51 F.C.C. 2d 945 (1975), appears at Appendix C (Pet. App. 135a-266a); and its Memorandum Opinion and Order denying further reconsideration, reported at 55 F.C.C. 2d 771 (1975), appears at Appendix D. (Pet. App. 267a-273a).

JURISDICTION

The judgment of the Court of Appeals (Opinion by Wilkey, Cir. J.) was entered on January 5, 1976, and this petition for writ of certiorari is filed within 90 days of that date. The Court of Appeals, upon motion of this petitioner and after considering the FCC's brief in opposition, granted a stay of its mandate pending the filing of this petition for certiorari. The jurisdiction of this Court is invoked under 28 U.S.C. § 1254(1) (1970).

QUESTIONS PRESENTED

The Monopoly Issues

(a) AT&T and the Cellular System

1. Whether the Court of Appeals erred in affirming a rulemaking order of the FCC disposing of a vast band of the radio spectrum on a basis such that, as the Court of Appeals found, American Telephone and Telegraph Company ("AT&T") "appears likely to dominate substantially the field of radio telephone service, which has heretofore been occupied in significant part by radio common carriers operating in a highly competitive environment," or whether the rulings violate the antitrust component of the "public

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convenience, interest, or necessity" standard of the Communications Act (the "Act") (47 U.S.C. § 303)?

2. Whether the Court of Appeals erred in affirming a rulemaking order of the FCC which, as the Court of Appeals found, enhances AT&T's monopoly power by "elimination of a requirement that wireline operators [AT&T and associated telephone companies] offer to interconnect radio common carriers into their systems," or whether the rulings violate the "public interest" standard of the Act, *supra*?

3. Whether the Court of Appeals erred in affirming a rulemaking order of the FCC which will enhance AT&T's monopoly position, as the Court of Appeals found, by authorizing it to "become a significant force in the now highly competitive market for private dispatch services"?

(b) Motorola and the Non-Cellular Operators (SMRS)

4. Whether the Court of Appeals erred in affirming a rulemaking order of the FCC which, for the first time in the more than 30-year history of the industry, authorizes radio equipment manufacturers (especially Motorola, Inc., which, as the Court of Appeals finds, "enjoys substantial domination of the sales market for mobile radio systems") to obtain licenses and operate on a vertically-integrated basis in competition with small radio common carriers which must rely upon them for equipment—an FCC action which the Court of Appeals finds "could discourage competition"?

(c) The RCCs

5. Whether the Court of Appeals erred in affirming a rulemaking order of the FCC allocating nearly

three times the total radio spectrum now available for land mobile radio service on a basis which effectively excludes the independent, regulated radio common carriers from access thereto and which will virtually eliminate them as competitive factors in the service?

The Common Carrier Issue: Deregulation

(a) Deregulation

6. Whether the Court of Appeals erred in affirming a rulemaking order of the FCC decreeing that the common carrier provisions of the Act will not apply to non-cellular land mobile radio service to be provided to the public in the newly authorized spectrum on an "entrepreneurial," for-hire, for-profit basis, or whether this deregulation is contrary to the explicit provisions of the Act (47 U.S.C. §153(h))?

(b) Definition of Common Carrier

7. Whether the Court of Appeals erred in holding that entrepreneurs authorized to provide service to the public on a for-hire, for-profit basis are not common carriers as defined by the Act and are not subject to the regulatory provisions of the Act and of state laws, on the grounds that these entrepreneurs may elect not to serve the public?

The Preemption Issue

8. Whether the Court of Appeals erred in affirming the Commission's order decreeing the "preemption" of state regulatory jurisdiction, despite the fact that the Act expressly vests regulatory authority in the states (47 U.S.C. §§152(b) and 221(b))?

The Judicial-Review Issues

9. Whether the Court of Appeals erroneously departed from the fundamental *Chenery* rule (*SEC* v. *Chenery Corp.*, 318 U.S. 80, 95 (1943)) by affirming the Commission's deregulation order on the grounds that the licensees are free to refuse to serve the public: grounds which were neither stated nor considered by the Commission and which contradict the Commission's design for providing service to the public.

10. Whether the Court of Appeals erred in refusing to set aside the Commision's order on the grounds that the monopoly and common carrier issues could be the subject of "future challenge" and private litigation?

STATUTORY PROVISIONS INVOLVED

Federal Communications Act of 1934, as amended, 47 U.S.C. § 151 *et seq.* (1970); Federal Administrative Procedure Act, 5 U.S.C. § 551 *et seq.* (1970). Relevant sections of the statutes are set out in Appendices E and F, respectively. (Pet. App. 274a-293a).

STATEMENT OF THE CASE

In this case, petitioner seeks review of a decision of the Court of Appeals which affirms, *in toto,* an order of the FCC allocating for the mobile radio services a vast amount of the limited radio spectrum and establishing rules for licensing the use of such spectrum.

A. Background

1. *Identity of Petitioner.* Petitioner is the national trade association representing the approximately 550 independent radio common carriers ("RCCs"), described hereinafter.

2. *The Service Involved.* This case involves the land mobile radio communications service: i.e., the use of radio signals for communications between fixed transmitting (base) radio stations and moving vehicles, or between moving vehicles themselves. There are presently about four million users of the land mobile radio service. It is of great and growing importance to business and industry and to public services and agencies such as police and fire departments. The spectrum heretofore assigned to the service is approaching exhaustion due to the phenomenal growth of its use.

The service was in existence prior to the Communications Act of 1934. It was expressly defined and included in the Act,[3] along with telephone, cable and other wireless and radio service; and it is subject to the comprehensive regulatory scheme of the Act designed to control the use of radio frequencies and to provide for regulation of the service.

The service takes three forms:

a. "General" (or radiotelephone) service, which involves two-way radiotelephone communications between ordinary telephones and mobile transmitter/receivers (usually located in a car or truck). 47 C.F.R. § 21.1 (1974). This service requires interconnection of the radio facilities with the nationwide telephone network of AT&T and associated telephone companies.

b. "Dispatch" service, which involves two-way radio communications (such as used by taxicab companies, utilities, delivery and service companies) between mobile transmitter/receivers and either (1) a

[3] 47 U.S.C. §§ 153(l), (m) and (n) (definitions of "mobile station," "land station" and "mobile service").

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fixed location transmitter/receiver or (2) other mobile units. 47 C.F.R. § 21.1 (1974).

c. "Signaling" (or paging) service (excluded from this case by the FCC), which involves a one-way radio communication to a small portable receiver carried by persons. 47 C.F.R. § 21.1 (1974). The "beepers" carried by physicians or repairmen alerting them to call their offices are examples of this service.

3. *The Participants in the Service.* The design of the Communications Act, heretofore implemented by the FCC regulations, provides that licensed mobile radio service may be provided in one of two ways: to the public by common carriers; to an individual user or a cooperative group of users by licensing for their private, not-for-hire, non-profit use. No provision is made for service to the public which does not own and operate its own system, either individually or cooperatively, except by regulated common carriers.

a. *The Common Carriers:* The telephone industry has historically provided land mobile radio service as an adjunct to ordinary telephone service. Local telephone companies are separately licensed by regulatory authorities for this purpose.

The non-telephone company carriers engaged in this service are the radio common carriers represented by petitioner. There are about 550 RCCs located throughout the United States. Despite their great importance in providing service (see *infra*), the RCCs are small, independent entrepreneurial enterprises not affiliated with the telephone, telegraph, private line microwave or domestic satellite industries, or with any other form of communications common carriage. Many of them are outgrowths of small "mom and pop" telephone

answering services. A recent study showed that 67 percent of the RCCs in 1973 had gross annual revenues of $0-$50,000. There are a few RCCs of substantial size.[4] The RCCs, as well as the telephone companies, are licensed and regulated as common carriers in the Domestic Public Land Mobile Radio Service ("DPLMRS")[5] by the FCC, and by state regulatory authorities.[6]

b. *The Private Users.* FCC rules provide that land mobile radio service users, instead of obtaining service from the common carriers, may obtain a license and operate mobile radio systems for their own private use. Many private users have availed themselves of this option, either on a single or cooperative basis. Private operations must be on a not-for-hire, "non-profit," "non-common carrier" basis as explicitly provided in the detailed rules of the Commission. 47 C.F.R. Parts 89, 91 and 93 (1973). Obviously, private users are not subject to common carrier regulation as to rates, services, etc, and the rules, until the present orders, have been carefully designed to forbid their offering service to the public.

c. *Basis of Participation.* The Act gives the FCC comprehensive control over the allocation and use of the radio spectrum. Both common carriers and private users must obtain licenses from the FCC for the radio frequencies which they may use in a given area.

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[4] According to the study, 1.9 percent of the RCCs had gross annual revenues in excess of $400,000. *Perrin Affidavit*, Exhibit 5F to petitioner's Motion for Stay to the Court of Appeals, filed May 6, 1975.

[5] 47 C.F.R. § 21.500, *et seq.* (1974).

[6] All but five states have applicable regulatory laws: Connecticut, Iowa, New Jersey, Oregon and Rhode Island. Where no state law is in effect, the Act permits regulation of rates, practices and services by the FCC.

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47 U.S.C. § 301. Due to the relatively limited range of the radio equipment employed (about 25-30 miles), land mobile radio operations are "intrastate". Under the Act, these operations are classified as "intrastate" even if a portion of the service is interstate or foreign communication and even if interconnected with the telephone network. 47 U.S.C. §§ 152(b), 153(e), 221(b).

The Act requires that common carriers must charge rates which are just and reasonable, must serve all upon reasonable request, must avoid discriminations and preferences, etc. 47 U.S.C. §§ 201, 202. None of these requirements is applicable to non-common carriers.

Apart from the procedures and prohibitions of the federal Act, the common carriers, under the specific provisions of the Act, are subject to the exclusive jurisdiction of state commissions as to "charges, classifications, practices, services, facilities, or regulations," where jurisdiction is exercised under state law. 47 U.S.C. §§ 152(b) and 221(b).[7]

4. *The RCCs.* Pursuant to their licenses from the FCC and state authorities, RCCs operate base radio station facilities and mobile radio units which they purchase or lease from manufacturers and supply to their customers for such radiotelephone and dispatch services, as well as paging, as the regulatory agencies determine that the public interest, convenience and necessity require. The RCC industry was authorized by

[7] 47 U.S.C. § 221(b) provides that the FCC shall have no jurisdiction "with respect to charges, classifications, practices, services, facilities, or regulations . . . in any case where such matters are subject to regulation by a State commission or by local governmental authority."

the FCC in 1949 for the express purpose of competing with the telephone industry (primarily AT&T and its affiliates) in the provision of common carrier land mobile communications services. *General Mobile Radio Service,* 13 F.C.C. 1190 (1949).

In this competition, the RCCs have been remarkably successful. Despite the handicap that they have been allocated fewer frequencies by the FCC, they serve substantially more mobile units than all telephone companies combined.[8] RCC-served mobile units have been growing at nearly three times the rate of telephone company-served units.[9] In turn, the FCC, in past years, itself has expressly and repeatedly found the competition between RCCs and the telephone industry to be desirable and in the public interest.[10]

In order to become licensed under the plan of the Act, an RCC, as a common carrier, must obtain a certificate of public convenience and necessity from the state commission, where required by state law. 47 C.F.R. § 21.15(c)(4) (1974). It then applies to the FCC for a construction permit and assignment of a frequency. 47 C.F.R. § 21.10 *et seq.* (1974). Quasi-judicial hearings and proceedings are provided for, in the usual form. 47 U.S.C. § 309. If the RCC-applicant obtains a frequency assignment, it then operates under

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[8] See, e.g., Lohr, "Scenario Change Needed for 900 Megahertz Frequencies," *Communicator,* Vol. 17, No. 11 (December 1975), p. 10.

[9] *Ibid.*

[10] E.g., *General Mobile Radio Service,* 13 F.C.C. 1190, 1218 (1949); *General Telephone Company of California,* 21 Pike & Fischer Radio Reg. 19 (1960); *ITT Mobile Telephone Company,* 1 Pike & Fischer Radio Reg. 2d 957 (1963).

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the technical supervision of the FCC as to the use of the assigned frequencies and related matters. See 47 C.F.R. § 21.500 *et seq.* (1974). At the same time, it operates under the rates, services and practices supervision of the state and the general requirements of the Communications Act applicable to common carriers, including the requirement as to just and reasonable rates and the mandate to serve the general public "upon reasonable request" and to avoid discrimination—provisions which in practice are principally implemented by state commissions.

5. *AT&T and the Manufacturers (Motorola)*

a. AT&T obviously occupies a key role in the industry. Telephone companies are specially licensed to provide land mobile service, like the RCCs, and directly compete with the RCCs. RCCs are absolutely dependent upon AT&T and associated telephone companies for their radiotelephone business, which requires interconnections between RCC radio facilities and the nationwide telephone network. The attempts of the RCCs to obtain such interconnections on reasonable terms and conditions have been and are a source of continuing controversy and litigation between the RCCs and the AT&T-associated companies. In a pending monopoly antitrust action, the United States Government has expressly charged AT&T with monopolistic and restrictive practices in this field: specifically, with concerted action to "eliminate competition from other telecommunications common carriers" and with "obstruct[ing] the interconnection of Radio Common Carriers with the Bell System." [11]

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[11] *Complaint*, ¶¶ 28(b), 29(c), *United States* v. *American Telephone and Telegraph Company, et al.*, D.C.D.C. Civ. Action No. 74-1698 (Nov. 20, 1974) ("continuing agreement and concert of

Nevertheless, as the Court of Appeals found, the FCC order in this case provides for "significant increases in [AT&T's] market power"; will enable AT&T to "dominate substantially the field of radio telephone service, which has heretofore been occupied in significant part by small radio common carriers operating in a highly competitive environment"; and will enable AT&T to "become a significant force in the now highly competitive market for private dispatch services." (Pet. App. 11a-12a). (Despite these findings, the Court of Appeals affirmed).

b. The RCCs are also totally dependent upon manufacturers of radio communications systems and facilities to supply the base station facilities which they directly operate and also the mobile radio units which RCCs lease or sell to their customers. As the Court of Appeals found, Motorola, Inc., "enjoys substantial domination of the sales market for mobile radio systems" (Pet. App. 30a). Motorola accounts for about 64 percent of the land mobile radio equipment market. The next largest is General Electric Company with about 15 percent. Motorola also directly controls the prime base station antenna sites in many, if not most, of the metropolitan areas across the country.[12] Access to such sites is vital to any RCC.

Manufacturers have never before been vertically integrated, i.e., licensed to operate carrier communica-

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action . . . to prevent, restrict and eliminate competition from other telecommunications common carriers", including, *inter alia*, "attempt[ing] to obstruct and obstruct[ing] the interconnection of Radio Common Carriers with the Bell System").

[12] *Wolf Affidavit*, Exhibit 5C to petitioner's Motion for Stay to the Court of Appeals, filed May 6, 1975.

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tions systems in competition with their customers; but are now expressly permitted to do so under the subject FCC order. The Court of Appeals found that Motorola's "size and financial power . . . could discourage competition" and that cause may arise "for independent antitrust actions." (Pet. App. 30a-31a). (The court nevertheless affirmed).

B. The Regulatory Plan of the Communications Act

This petition presents issues arising particularly under Title II of the Communications Act (Common Carriers) and Title III of that Act (Special Provisions Relating to Radio). The Commission's general authority to make allocations and to authorize and issue licenses to use the radio spectrum appears in Title III. 47 U.S.C. §§ 301, 303, 307-309. All participants in the mobile radio communications field are subject to these provisions. Title III prescribes the standard to govern Commission action: "public convenience, interest or necessity". 47 U.S.C. §§ 307 and 309. It requires that applications shall specify the "financial," "character," and other qualifications of the applicant (47 U.S.C. §§ 308(b) and 319); and, among other procedural rights, it guarantees to "any party in interest" the right to file a petition to deny an application and the right to a hearing if "a substantial and material question of fact is presented". 47 U.S.C. § 309. And it includes provisions to prevent or penalize defined activities which are in restraint of trade or which are monopolistic. 47 U.S.C. §§ 313 and 314.

Title II of the Act applies to all communications common carriers, whether by wire or radio. "Common carrier" is defined as "a person engaged as a common carrier for hire". 47 U.S.C. § 153(h). In addition to

the requirement that common carriers must serve all "upon reasonable request therefor" (47 U.S.C. § 201), Title II requires that the charges, practices, etc., of common carriers shall be "just and reasonable," and it outlaws "unjust or unreasonable discrimination in charges, practices," unreasonable preferences by common carriers, etc. 47 U.S.C. §§ 201, 202(a). It provides injured persons with a private remedy for damages resulting from common carrier fault. 47 U.S.C. § 207. It prohibits interlocking directorates among common carriers. 47 U.S.C. § 212.

Jurisdiction with respect to "charges, classifications, practices, services, facilities, or regulations" over common carriers in intrastate commerce is exclusively vested in state commissions when such matters are regulated by state law, and Commission authority is explicitly precluded when the states provide for such regulation. 47 U.S.C. § 221(b). The FCC has the right and duty to regulate such matters in the absence of state regulation. *Ibid.*

The Act contains no authority for the Commission to exempt a common carrier from its provisions or from the prescribed regulatory provisions. There is no provision for "contract" carriers: i.e., for carriers to provide for-hire, for-profit service to others on a "non-common" carrier basis. There are only two categories under the Act and the regulations prior to the present order: service to the public, by common carriers; and service for one's own use, either on an individual or cooperative (not-for-hire, non-profit) basis.

C. Proceedings Before the FCC

In the present rulemaking order affirmed by the Court of Appeals, the FCC allocated 115 MHz of the

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public domain (i.e., the radio spectrum) in the 806-960 MHz band to accommodate present and anticipated future land mobile service needs to approximately the end of the century.[13] This is nearly *three times* the amount of spectrum heretofore allocated to all land mobile services combined.

1. *AT&T; The Cellular System; Interconnection.* Of the 115 MHz, the FCC allocated 40 MHz for development and licensing of a new and untried common carrier "cellular" mobile radio system, to furnish radiotelephone and dispatch services. It is not scheduled to become operative on a general basis until at least sometime in the 1980s. This is a complex system which has largely been devised by AT&T to provide mobile radio service. As the Court of Appeals found, "AT&T is the likely recipient of a virtual monopoly in the operation of cellular systems". (Pet. App. 11a). The magnitude of this monopoly can be illustrated by the fact that AT&T claims to have spent $20 million on its development to date, and anticipates that additional millions will have to be spent through 1978.

The Commission also relieved AT&T of its obligation to provide interconnections with the telephone system to other radio carriers. (The Court of Appeals characterized this as "somewhat puzzling", saying that "the Commission has given no justification" for it, and that "[a] substantial anticompetitive impact seems almost inevitable". (Pet. App. 12a, fn. 29). (The court nevertheless affirmed).

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[13] This part of the spectrum had previously been reserved for UHF-TV channels, federal government radiolocation operations, broadcast auxiliary services and industrial, scientific and medical equipment.

2. *SMRS; Motorola; Preemption.* The FCC also allocated 30 MHz for non-cellular service to private and all other users, to be operated on a non-common carrier basis; and it kept 45 MHz in reserve. It made no other provision for public use; it refused to make an allocation for common carrier operation (which would have been available for licensing to the RCCs) except for the cellular system. Service to the public, in the newly allocated 30 MHz band, apart from "private users" (which is not at issue in this appeal), is to be provided solely by unregulated "entrepreneurs" operating on a for-hire, for-profit basis, but freed from the substantive and procedural regulatory provisions applicable to common carriers. This newly-invented category is referred to in the Commission's order as "Specialized Mobile Radio Systems" (SMRS).

For the first time in history, the Commission authorized radio equipment manufacturers, including Motorola, Inc., the dominant manufacturer and supplier, to qualify for this service and to enter the field as vertically-integrated entrepreneurs (see *infra*).

As part of its deregulation of this service, the Commission "preempted" state jurisdiction to issue certificates of convenience and necessity as a precondition to entry, on the ground of federal "primacy".[14] It ex-

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[14] The FCC originally preempted all state regulation of SMRS (then known as "common user systems"), but on reconsideration it professed to preempt state jurisdiction over SMRS entry into the field—the indispensable basis of state enforcement powers and authority—and to "defer judgment as to any action by the states relating to the regulation of other aspects of SMR operations." (Pet. App. 189a.) It warned, however, that "rate-structured, common-carrier-type regulation is inconsistent with the free-market competitive environment we feel is necessary". (*Ibid.*).

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plained its surgical operation on the Act and on state jurisdiction as necessary "to shed this heavy cloak [common carrier provisions of the Act] and exchange it for one with far greater flexibility" (Pet. App. 59a).

The Commission confessed that this sweeping deregulation was "not free from doubt". (Pet. App. 157a). The Court of Appeals nevertheless affirmed (see *infra*).

D. The Decision Below

Petitioners sought review of the FCC order by the Court of Appeals pursuant to 47 U.S.C. § 402(a) and 28 U.S.C. § 2342. Petitioner sought a stay *pendente lite*, and by order entered June 10, 1975, the Court of Appeals (Wright and MacKinnon, JJ.) stayed the FCC order pending appeal "to the extent that it authorizes the assignment or operation of radio spectrum space to Specialized Mobil[e] Radio Systems". It did not stay the portion of the order relating to private users (which is not at issue in this appeal), or to cellular systems which are not scheduled for operation in any form until at least 1978.[15]

On the merits, the Court of Appeals (Tamm, MacKinnon and Wilkey, JJ.), per Wilkey, Circuit Judge, affirmed the FCC order *in toto*. In substance, in a decision which we respectfully characterize as at least unusual, the court found as follows:

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[15] On July 31, 1975, the Illinois Bell Telephone Company (an AT&T subsidiary) filed for authority from the FCC, pursuant to the instant decision, to construct and operate a commercial "cellular" mobile radio system in the Chicago metropolitan area, estimated to require an additional investment of at least $23.5 million through 1978. *In the Matter of Application of Illinois Bell Telephone Company,* File No. 20115-CD-P-(—)-76. This application is pending.

1. *On the Monopoly-Antitrust Issues:*

a. *AT&T.* The court below found that under the FCC order AT&T "is the likely recipient of a virtual monopoly in the operation of cellular systems"; that "this will result in significant increases in its market power"; that AT&T "appears likely to dominate substantially the field of radio telephone service, which has heretofore been occupied in significant part by small radio common carriers [the RCCs represented by petitioner] operating in a highly competitive environment"; that "[t]his threat [of AT&T dominance of radiotelephone service] is made more severe by the 1975 Order's elimination of a requirement that wireline operators offer to connect radio common carriers into their systems" (it found the FCC's decision to this effect unexplained and "somewhat puzzling");[16] that AT&T "will become a significant force in the now highly competitive market for private dispatch services";[17] and that the FCC provisions in the orders under review to minimize such anticompetitive behavior (principally relating to accounting) "likely . . . will prove largely cosmetic." (Pet. App. 11a-13a). The court nevertheless affirmed, stating that "we are

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[16] AT&T's continuing resistance to the interconnection of its facilities with other communications systems has been ventilated in various forums. See, e.g., *Bell Telephone Company of Pennsylvania* v. *FCC*, 503 F.2d 1250 (3d Cir. 1974), cert. den. 95 S.Ct. 2620 (1975) (interconnection with specialized common carriers for FX and CCSA private line service); *Carterfone*, 13 F.C.C. 2d 420 (1968), recon. den. 14 F.C.C. 2d 751 (1969) (interconnection of private radio systems).

[17] The Court of Appeals further states that it "is unclear whether the authorization to engage in dispatch service is in violation of the 1956 Western Electric consent decree." But it affirms without deciding this issue.

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not unaware of substantial anticompetitive effects which may become more apparent as the date for general implementation of the [cellular] systems draws nearer. . . . We make no comment upon the possible success of any antitrust actions which may in the future be brought". (Pet. App. 33a).

b. *Motorola.* The court found that the unprecedented authorization to Motorola to operate as a radio carrier on a vertically integrated basis is a "potential threat" to competition and to small radio carriers. (Pet. App. 30a). The court held that the FCC's authorization to Motorola "could discourage competition" and "may provide cause for independent antitrust actions". (Pet. App. 30a-31a). It nevertheless affirmed.

2. *On the Common Carrier Issue:* The court also affirmed the FCC order relieving entrepreneurial, for-hire, for-profit operators providing service to the public in the 30 MHz segment of the allocated spectrum (the SMRS) from the common carrier regulatory provisions of the Act. The FCC's basis for its action was its theory that it has the discretion to "confer or not confer common carrier status on a given entity, depending upon the regulatory goals it seeks to achieve" (Pet. App. 26a), a theory which the FCC itself confessed is "not free from doubt" (Pet. App. 157a). The court below sustained the FCC's action on different grounds, neither considered nor discussed by the FCC: i.e., that these SMRS operators, although authorized to serve the public, might choose to serve only selected members of the public, and not to serve the public "indifferently". The court held that if the operators discriminate in this fashion among those seeking service from the public domain, they would not be "com-

mon carriers". The court conceded that the Commission's order *authorizes* the SMRS to serve the public generally, but it affirmed, stating that if the SMRS do so the order "will be open to renewed attack". (Pet. App. 33a).

3. *On the Preemption Issue:* The FCC preempted state jurisdiction on the grounds that it has discretionary power to do so in the interest of facilitating its overall plan, whether or not SMRS are considered to be common carriers. The court sustained preemption, but on a different ground: i.e., on the basis of its holding that the SMRS are not common carriers.

REASONS FOR GRANTING THE WRIT

Petitioner respectfully submits that an extraordinary number of reasons demonstrates that the writ of certiorari should issue:

A. In Summary

1. The importance of the case merits review by this Court.

2. The decision of the Court of Appeals is in conflict with decisions of this Court: *Gulf States Utilities Co.* v. *FPC,* 411 U.S. 747 (1973) (the monopoly issue); *FPC* v. *Texaco, Inc.,* 417 U.S. 380 (1974) (deregulation); *SEC* v. *Chenery Corp.,* 318 U.S. 80 (1943) (principles of appellate review); *Head* v. *New Mexico Board of Examiners,* 374 U.S. 424 (1963) and *Florida Lime and Avocado Growers* v. *Paul,* 373 U.S. 132 (1963) (preemption).

3. The decision of the Court of Appeals determines fundamental questions as to the interpretation and

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application of the Communications Act of 1934 in conflict with that Act and applicable law.

4. The decision of the Court of Appeals determines questions of fundamental importance in the interpretation and application of the Communications Act of 1934, which have not heretofore been ruled upon by this Court, but should be decided by it.

5. The decision of the Court of Appeals affirms the preemption of state jurisdiction by agency decree in direct violation of the specific direction of the Communications Act of 1934 and in conflict with the rulings of this Court.

6. The decision of the Court of Appeals violates the fundamental *Chenery* rule: that a reviewing court may not affirm agency action on grounds radically different from those which impelled the action of the agency itself. This case demonstrates the reason for the rule (see *infra*).

7. The decision of the Court of Appeals is predicated upon an erroneous judgment as to the role of an appellate court reviewing an administrative rule-making order of a regulatory agency: that is, instead of reversing agency actions which the Court of Appeals found to violate and to require and authorize violations of law, the court ordered that the agency's order should stand, subject to *future* challenge.

B. Argument

1. *Importance of the Case.* The FCC order is of fundamental importance to the mobile radio industry; to the 550 independent, small RCCs; to four million present users; to many public agencies; to American business enterprises which require access to the essen-

tial instruments of mobile radio communication and require it on non-discriminatory terms in order to compete; to basic antitrust and antimonopoly objectives of our law and national policy; to the definition and application of the "common carrier" concept which is fundamental to the Communications Act and other laws; to federal-state relations; to the interpretation and application of the Communications Act; and to the principles of judicial review of agency action.

2. *Conflict with Decisions of this Court.*

a. *Gulf States Utilities Co.* v. *FPC and the monopoly issue.* The statutory standard controlling FCC action is "public convenience, interest, or necessity". 47 U.S.C. § 303. In *Gulf States* this Court held that the "public interest" standard requires application of antitrust standards by administrative agencies as a "first line of defense against those competitive practices that might later be the subject of antitrust proceedings". 411 U.S. at 760. The decision below is in direct conflict with *Gulf States* which the court neither cites nor seeks to reconcile with its decision.

(1) *AT&T.* The Court of Appeals found that the FCC's order conferred a "virtual monopoly" of the cellular system on AT&T; that it bestowed upon AT&T substantial dominance in radiotelephone service to the prejudice of "small radio common carriers operating in a highly competitive environment"; that it enabled AT&T to "become a significant force in the now highly competitive market for private dispatch services"; and that it, without explanation, eliminated AT&T's obligation to provide interconnections. Nevertheless, the court held that this is not, "at this time, a breach of

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the broad discretion allocated to the Commission". It asserted that "there will be ample opportunity to challenge anticompetitive effects as the time approaches when they will be felt". (Pet. App. 14a-16a).[18]

We submit, first, that, on the merits, this decision is in conflict with *Gulf States* and other decisions of this Court on the monopoly issue and with the specific antimonopoly provisions and policies of the Communications Act (47 U.S.C. §§ 313, 314); and second, that the Court of Appeals' "deferral" of the monopoly issue until after millions of dollars are spent on new facilities, many RCCs are driven out of business, vested interests are created, and much public injury has resulted—is in obvious disregard of the facts and in conflict with appropriate principles of appellate review (see *infra*).

(2) *Motorola, Inc.* The Court of Appeals found that the FCC's unprecedented authorization to radio equipment manufacturers and suppliers, especially to the dominant supplier, Motorola, also to engage in the business of providing carrier service on a vertically-integrated basis is a "potential threat" to competition and to small radio carriers, and "may provide cause for independent antitrust actions". (Pet. App. 30a-31a). But it inexplicably held that the authorization is justifiable because the threat "arises from economic power alone and not from any of Motorola's

[18] The court did not refer to, or comment upon the implications of, the Government's antitrust monopoly action against AT&T seeking to break up the Bell System for AT&T's monopolistic practices in this precise field. The Government's complaint explicitly covers AT&T's restrictive and monopolistic practices against the RCCs. See *supra*; Complaint (¶¶ 28(b), 29(c)) in *United States* v. *American Telephone and Telegraph Company, et al.*, D.C.D.C. Civ. Action No. 74-1698 (Nov. 20, 1974).

mobile radio-related activities." (Pet. App. 30a). The court notes that "independent antitrust actions" may be brought to challenge the anticompetitive effects resulting from the Commission's order.

We must respectfully suggest that this reasoning is insupportable and bewildering. The court does not question—it affirms—that the FCC order will vest Motorola with power to injure or destroy competition in mobile radio communications because of the vertical integration that it authorizes. *Cf., United States* v. *Paramount Pictures,* 334 U.S. 131, 174 (1948). This power is the direct consequence of the Commission's order. The court's conclusion is in conflict with established antitrust law and with *Gulf States Utilities Co., supra;* it is in violation of the "public interest" standard as construed by this Court; it is directly contrary to the provision of the Communications Act specifically providing that the antitrust laws are applicable to "manufacture and sale of" radio apparatus. 47 U.S.C. § 313. Further, the court's affirmance of the order with respect to Motorola on the basis that future "independent antitrust actions" may be brought is an erroneous view of the responsibility of an appellate court reviewing agency action.

We respectfully submit that the reviewing court is not justified in affirming agency action in the face of antitrust findings such as those in this case, and remitting the parties and the public interest to possible remedies after the damage is done.

b. *FPC* v. *Texaco, Inc., and deregulation.* In affirming the Commission's extraordinary departure from the mandate of the Communications Act in the interests of deregulation, the Court of Appeals does not

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cite or discuss this Court's holding in *FPC* v. *Texaco, Inc.*, 417 U.S. 380 (1974). In that case, on the basis of a rulemaking proceeding and a public interest rationale of much greater force than in the present case, the FPC had substituted for the rate regulation procedures and standards of the Act (15 U.S.C. §§ 717c and 717d), a "regulatory plan" by which adjustments and refunds would be made in the rates charged by small producers of natural gas if the market prices realized were unreasonably high. This Court set aside the FPC's order. It ruled that the FPC does not have the power "to set at naught an explicit provision of the Act" (417 U.S. at 394), or to substitute for regulatory jurisdiction which the Act mandated, a scheme by which the market place would be the regulator (precisely what the FCC purports to do in the present case). 417 U.S. at 395-399. As Mr. Justice White observed, writing for the unanimous Court, the Act "does not say a little unlawfulness is permitted". 417 U.S. at 399.

In the present orders, the FCC does not even purport to comply with the Act by substituting a different type of regulation. It boldly affirms that its purpose is completely to deregulate: in the Commission's words, "to shed this heavy cloak [common carrier provisions of the Act] and exchange it for one with far greater flexibility". (Pet. App. 59a). To achieve this goal, the FCC created a category of entrepreneurs which, as the Court of Appeals stated, "are not required to behave and thus be regulated, as common carriers". (Pet. App. 29a). The Commission totally relieved the for-hire for-profit purveyors of entrepreneurial communications services to the public (the SMRS) from the substantive and procedural regulations of the Act: from the hearing requirements—frequencies are to be assigned on a "first-come, first-served" basis (Pet. App.

7a); from the requirement that their charges, practices, etc., be just and reasonable (47 U.S.C. § 201(b)); from the prohibition against unjust or unreasonable discrimination in charges, practices, etc., and unreasonable preferences (47 U.S.C. § 202(a)); from state jurisdiction and oversight over intrastate operations (47 U.S.C. §§ 152(b) and 221(b)); from the required showing of character and financial qualifications (47 U.S.C. § 308(b)); from the prescribed public notice and waiting period (47 U.S.C. § 309(f)); and from the right of parties in interest to contest license applications (47 U.S.C. § 309(d)). *Cf. Ashbacker Radio Corp.* v. *FCC,* 326 U.S. 327 (1945).

It did so in the interests of a grand design to promote more effective use of the spectrum, as it conceived of it, and to avoid procedural burdens. But neither these nor any other objectives sanction Commission defiance of the statute. It is supposed to administer the statute, not to violate or rewrite it. As stated by this Court in *Texaco:* "The Commission may have great discretion as to how to insure just and reasonable rates, but it is plain enough to us that the Act does not empower it to exempt small producer rates from compliance with that standard." 417 U.S. at 394.

c. *Head* v. *New Mexico Board of Examiners; Florida Lime and Avocado Growers* v. *Paul; preemption.* This Court has repeatedly insisted that federal preemption of state authority is a power that must be exercised only in clear cases and upon a clear showing. The test is that state statutes may not be preempted unless there is found "'such actual conflict between the two schemes of regulation that both cannot stand in the same area, [or] evidence of a congressional design to preempt the field.' *Florida Lime and Avocado*

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Growers v. *Paul,* 373 U.S. 132, 141, 83 S.Ct. 1210, 1217."[19] The congressional design in the present case is precisely the opposite. It affirmatively prescribes state jurisdiction which is the basic regulatory machinery of the Act. And certainly, there is no evidence of "actual conflict between the two schemes of regulation." They have existed side-by-side for more than 30 years during which the industry has experienced remarkable growth and development and public service has expanded spectacularly.

Obviously, this is in precise contradiction of the standards set by this Court (*supra*). The Commission rested its decision to "preempt" on the grounds of "federal primacy"—a claim of power which violates our concepts of federal-state relationships and the clear directions of this Court.

The Court of Appeals affirmed the Commission's preemption order, but on a somewhat different ground. The court held that since the Commission had excluded the SMRS, as a matter of federal law, from regulation as common carriers, "it follows that any state regulation inconsistent with the policy adopted may be pre-empted". As we shall discuss, the court's basic premise—that the Commission may validly exclude the SMRS from regulation under federal law—is clearly incorrect. They are "common carriers" and must be subjected to regulation under federal and state law as such. In any event, we submit that agency preemption of state authority in a rulemaking proceeding, prior to any experience, is at least suspect. In fact, if the SMRS are not common carriers, preemption would be idle and unnecessary since the state regulatory statutes apply only to "common carriers." If the SMRS are

[19] *Head* v. *New Mexico Board of Examiners, supra,* 374 U.S. at 430.

common carriers, as we submit, preemption is a subversion of the clear, explicit mandate of the Communications Act and can, at best, be explained as based upon anticipated convenience and not upon the "actual conflict" required by this Court's standard.

d. *SEC* v. *Chenery Corp: rule governing appellate review of agency action.* As we have described, the Court of Appeals sustained the Commission's decision to deregulate the SMRS, but it rejected the Commission's basis for deregulation. The Commission held that it had discretionary authority to classify operators as common carriers or non-common carriers. The Court of Appeals emphatically rejected this claim of "unfettered discretion in the Commission to confer or not confer common carrier status" (Pet. App. 26a). But it then proceeded to support the Commission's conclusion by holding that the SMRS are not common carriers. Its basis was that, although the order authorized the SMRS to serve the public, they might choose not to do so, but to serve only selected customers.

The Commission, however, proceeded on the principle, an essential part of its design, that service to the public—to the vast category of potential users—would be provided by the SMRS. It assumed that the SMRS would offer its service "to whatever public its service may legally and practically be of use" (Pet. App. 23a). It made no other provision for general public access to the vast public domain which it allocated, except for the cellular systems which are not expected to be in operation until the 1980s.

The Court of Appeals, seeking a way to affirm the deregulation order, undermined this basic part of the Commission's order. In effect, the court's action would penalize any SMRS that offered to serve the public generally. It would then, according to the court, be

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operating as a common carrier, and since it would not be in compliance with the regulatory provisions of the Act and of state law, it would be operating illegally.

The court's decision that the SMRS are not common carriers is incorrect, as we shall show. But, apart from this, its grounds for sustaining deregulation are in clear conflict with the principle which this Court has characterized as "a simple but fundamental rule of administrative law," *SEC* v. *Chenery Corp.*, 332 U.S. 194, 196 (1947), namely, that "an administrative order cannot be upheld unless the grounds upon which the agency acted . . . were those upon which its action can be sustained." *SEC* v. *Chenery Corp.*, 318 U.S. 80, 95 (1943).

3. *The Common Carrier Issue.* The Court of Appeals sustained the Commission's deregulation of entrepreneurs authorized to serve the public on a for-hire, for-profit basis (SMRS) on the grounds that they are not "common carriers" as defined in the Act, although, the court stated, they might become common carriers if, as authorized by the Commission's order, they should in practice offer to serve the public generally.[20] The Court conceded that "it is undisputed that they [the SMRS] would be permitted [under the Commission's order] so to hold themselves out if they desired" (Pet. App. 26a); but it concluded that this "is not a sufficient basis for imposing the burdens that go with common carrier status." (*Ibid.*).

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[20] The Commission's second order purported to restrict the SMRS to provide service only to "eligibles" under Parts 89, 91 and 93 who may qualify for "private user" status. But these "eligibles" include virtually all conceivable members of the public who might seek mobile radio service. The Court of Appeals rejected the obviously spurious and insupportable suggestion that this device converts the SMRS into some sort of "private" rather than "public" carrier (Pet. App. 23a).

The definition of "common carrier" (47 U.S.C. §153(h)) is an issue of recurring importance under the Communications Act.[21] It is also of great importance with respect to the administration of other regulatory statutes, such as the Interstate Commerce Act, the Federal Aviation Act and the Shipping Act, particularly in light of the current public debate concerning deregulation. This Court has not ruled upon the question for purposes of the Communications Act, but should do so.

We respectfully submit that the decision of the court below is clearly in error. The SMRS, under the FCC's order, are authorized and expected to serve the public. Where an entrepreneur is granted a franchise to serve the public under the Act, he is *obliged* to serve the public. The Communications Act provides that a common carrier must serve the public "upon reasonable request". 47 U.S.C. § 201(a). Classification as a common carrier does not depend upon whether he in fact fulfills the obligation that is implicit in his license to serve the public. It may be true that common carrier status can be voluntarily incurred by performance, i.e., by offering service to the public; but it does not follow, logically or legally, that voluntary *non*-performance

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[21] See, e.g., *National Association of Regulatory Utility Commissioners* v. *FCC*, No. 75-1075, — U.S. App. D.C. —, — F.2d — (February 10, 1976) (use of cable television access channels for two-way point-to-point non-video communications service is common carriage); *Frontier Broadcasting Co.* v. *Collier*, 24 F.C.C. 251 (1958) and *Philadelphia Television Broadcasting Co.* v. *FCC*, 123 U.S. App. D.C. 298, 359 F.2d 282 (1966) (conventional CATV systems not common carriers); *Computer Inquiry*, 28 F.C.C. 2d 267 (1971) (establishing standards for distinguishing between data processing services and common carriage involving data communications); *Industrial Radiolocation Service*, 5 F.C.C. 2d 197 (1966) (radiolocation service not communications common carriage).

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relieves a common carrier of his responsibilities to be licensed and regulated under law.

The Communications Act contains no provision for exempting common carriers from its regulatory provisions. It contains no provision for "contract" carriers who may pick and choose among the public to be served. On the contrary, it permits only the licensing of operators for their own private use, on a single or cooperative basis, or as common carriers to serve the public without discrimination and on "reasonable request".[22]

The FCC recognized that the "entrepreneur-operated" SMRS "could be licensed as common carriers and regulated under Title II of the Communications Act" (Pet. App. 54a). It decreed that it would not do so on the grounds that it had discretion to make such a decision—a conclusion which it admitted was "not free from doubt". The Court of Appeals rejected its claim of "unfettered discretion", but then erroneously proceeded to construct a definition which, if allowed to stand, would undermine the fundamental purpose of the common carrier requirement: to require indiscriminate service to all of the public in exchange for the right to use the public domain "for-profit" and "for-hire", on an entrepreneurial basis.

We submit that the decision below is in error and that it is of such great importance that this Court should review the issue.

4. *The Preemption Issue.* As discussed above, the FCC's claim of power to preempt, and the Court of Appeals' refusal to reverse its preemption decision, are

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[22] See, e.g., *United States* v. *Drum*, 368 U.S. 370, 375, 376 (1962) (Motor Carrier Act of 1935) (application of the concept requires "reference to the clear but broad remedial purpose of a regulatory statute committed to agency discretion").

clearly erroneous. This is a recurring issue of vital importance which this Court should review.[23]

5. *The Function of Appellate Review.* This Court should grant review of the question precipitated by the decision of the court below: the function of an appellate court reviewing an administrative order in a rulemaking proceeding: *viz.*, whether it is the reviewing court's duty to decide the issues presented, and not to rubber-stamp agency action, despite substantial infirmities, on the grounds that future private or administrative action may be available.[24]

The Court of Appeals in this case made findings of palpable departures by the FCC from the mandate of the Communications Act and the law with respect to

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[23] The FCC's power to preempt state regulation is also being addressed by Courts of Appeals in various other current or pending cases where the FCC has recently asserted such power. See, e.g., *National Association of Regulatory Utility Commissioners* v. *FCC*, No. 75-1075, — U.S. App. D.C. —, — F.2d — (February 10, 1976) (FCC preemption of state jurisdiction over cable television leased access channels used for two-way point-to-point non-video communications services set aside); *Telerent Leasing Corp.*, 45 F.C.C. 2d 204 (1974), appeal pending *North Carolina Utilities Commission* v. *FCC*, No. 74-1220, *et al.*, (4th Cir.) (FCC preemption of state jurisdiction over telephone station equipment); *AT&T*, 56 F.C.C. 2d 14 (1975), appeal pending *California Public Utilities Commission* v. *FCC*, No. 75-2060, *et al.*, (D.C. Cir.) (FCC preemption of state jurisdiction over FX and CCSA private line service interconnection); *Interstate and Foreign Message Toll Telephone Service*, 56 F.C.C. 2d 593 (1975), appeal pending *North Carolina Utilities Commission* v. *FCC* No. 76-1002, *et al.*, (4th Cir.) (FCC preemption of state jurisdiction over customer-provided telephone equipment).

[24] The Administrative Procedure Act, 5 U.S.C. § 706(2), provides that a reviewing court shall "hold unlawful and set aside agency action . . . found to be . . . not in accordance with law; . . . in excess of statutory jurisdiction, authority or limitations, or short of statutory right".

the antitrust component of the "public convenience, interest or necessity" standard of the Act and its common carrier requirements. But the Court of Appeals refused to set aside the Commission's order on the apparent grounds that attack should await implementation of the order.

The Court of Appeals says that the cellular system allocation "may be subject to successful challenge at some future date" (Pet. App. 16a); it affirms the unprecedented authorization to Motorola to obtain licenses to operate base stations and to deploy its vertically integrated power, which, it acknowledges, "could discourage competition" and "may provide cause for independent antitrust actions" at a later date; it holds that the FCC order authorizes the SMRS to operate as common carriers, and that if "SMRS in practice behave as common carriers," the FCC's order "will be open to renewed attack". (Pet. App. 33a). Despite all of these infirmities, the Court of Appeals affirmed.

Petitioner submits that the court's affirmance of the FCC's order, despite this extraordinary series of legal infirmities in the order, and its insistence that effective judicial review must wait until the damage is done, is a novel and important restriction of the function and duty of a reviewing court in a rulemaking proceeding which should be reviewed by this Court.

CONCLUSION

For the reasons stated, a writ of certiorari should issue to review the judgment and opinion of the United States Court of Appeals for the District of Columbia Circuit.

Respectfully submitted,

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February 25, 1976

[redacted]

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IN THE

Supreme Court of the United States

OCTOBER TERM, 1975

No.

NATIONAL ASSOCIATION OF RADIOTELEPHONE SYSTEMS,
Petitioner,

v.

FEDERAL COMMUNICATIONS COMMISSION, *et al.*,
Respondents.

PETITIONER'S APPENDIX

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APPENDIX A

UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

Nos. 74-1555, 74-1585, 74-1659, 74-1696.

NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS, *Petitioner,*

v.

FEDERAL COMMUNICATIONS COMMISSION and United States of America, *Respondents,*

American Telephone and Telegraph Company, the National Association of Business & Educational Radio, Inc., General Electric Company, the Special Industrial Radio Service Assn., Inc., the Central Committee on Telecommunications of the American Petroleum Institute, Utilities Telecommunications Council, North Carolina Utilities Commission, South Carolina Public Service Comm., the People of the State of California and the Public Utilities Commission of the State of California, *Intervenors.*

NATIONAL ASSOCIATION OF RADIOTELEPHONE SYSTEMS, *Petitioner,*

v.

FEDERAL COMMUNICATIONS COMMISSION and United States of America, *Respondents,* The National Assn. of Business & Educational Radio, Inc., A. T. & T. Inc., General Electric Co., Special Industrial Radio Service Assn.,

Inc., Motorola, Inc., and Airsignal International, Inc., *Intervenors.*

Illinois Association of Radiotelephone Systems, Inc., *Petitioner,*

v.

Federal Communications Commission and United States of America, *Respondents,* American Telephone and Telegraph Company, National Association of Business & Educational Radio, Inc., and General Electric Company, *Intervenors.*

Ram Broadcasting Company, *Petitioner,*

v.

Federal Communications Commission and United States of America, *Respondents,*

National Association of Business and Educational Radio, Inc., and General Electric Company, *Intervenors.*

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Argued 12 Sept. 1975.

Decided 5 Jan. 1976.

[657]

Petitions for Review of an Order of the Federal Communications Commission.

Kenneth E. Hardman, Washington, D.C., with whom Paul Rodgers, Washington, D.C., was on the brief for petitioner in No. 74-1555.

Abe Fortas, Washington, D.C., for petitioner in No. 74-1585.

John E. Ingle, Counsel, F.C.C., with whom Ashton R. Hardy, Gen. Counsel, Daniel M. Armstrong, Acting Associate Gen. Counsel, F.C.C. and Carl D. Lawson, Atty., Dept. of Justice, were on the brief for respondents. Joseph Marino, Associate Gen. Counsel, F.C.C., at the time the record was filed, also entered an appearance for respondent F.C.C. Howard E. Shapiro, and Roger B. Andewelt, Attys., Dept. of Justice, entered an appearance for respondent, United States of America in Nos. 74-1555 and 74-1585.

John P. Bankson, Jr., Washington, D.C., for intervenor National Ass'n of Business and Educational Radio, Inc.

Louis Schwartz, Robert A. Woods and Lawrence M. Miller, Washington, D.C., were on the brief for petitioner in No. 74-1659.

[658] James A. Koerner, Washington, D. C., was on a statement filed in lieu of a brief, for petitioner in No. 74-1696.

Charles A. Horsky, Charles Lister, Washington, D. C., Alfred C. Patroll and F. Mark Garlinghouse, were on the brief for intervenor American Telephone and Telegraph Co. in Nos. 74-1555—74-1585 and 74-1659. Michael Boudin, Washington, D. C., also entered an appearance for intervenor American Telephone and Telegraph Co.

Wayne V. Black and Larry S. Solomon, Washington, D. C., were on the brief for intervenor Special Industrial Radio Service Ass'n, Inc., in Nos. 74-1555 and 74-1585.

Joseph E. Keller, Wayne V. Black and Larry S. Solomon, Washington, D.C., were on the brief for intervenor The Central Committee on Telecommunications of the American Petroleum Institute in No. 74-1555.

Charles M. Meehan and Peter M. Nemkov, Washington, D. C., were on the brief for intervenor, Utilities Telecommunications Council.

Edward B. Hipp and Robert F. Page, Raleigh, N. C., were on the brief for intervenor North Carolina Utilities Commission.

Richard D. Gravelle, J. Calvin Simpson, San Francisco, Cal., and Randolph W. Deutsch were on the brief for intervenors State of California and the Public Utilities Commission of the State of California.

Frederick M. Rowe, John L. Bartlett and John B. Wyss, Washington, D. C., were on the brief for intervenor Motorola, Inc., in No. 74-1585.

Joseph M. Kittner and Edward P. Taptich, Washington, D. C., entered appearances for intervenor General Electric Co.

Robert E. Conn and Thomas J. McCabe, Washington, D. C., entered appearances for intervenor Airsignal International, Inc., in No. 74-1585.

M. John Bowen, Jr., Columbia, S. C., entered an appearance for intervenor South Carolina Public Service Commission in No. 74-1555.

Before TAMM, MACKINNON and WILKEY, Circuit Judges.

Opinion for the Court filed by Circuit Judge WILKEY.

WILKEY, Circuit Judge:

Petitioners seek review of a two-part 1975 F.C.C. Memorandum Opinion and Order[1] (hereinafter 1975 Order), filed in a rulemaking proceeding of which notice was first

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[1] *Land Mobile Service*, Docket No. 18262, 51 F.C.C.2d 945 (19 March 1975); *Land Mobile Service*, Docket No. 18262 (16 July 1975) (Proceeding terminated) (J.A. at 537-540).

given in 1968.[2] The Order under review adopts the basic approach, with some modification, of a Second Report and Order,[3] (hereinafter 1974 Order), which issued after two rounds of comment had been received. This Court has jurisdiction to review the Orders under 47 U.S.C. § 402 (1970) and 28 U.S.C. § 2342 (1970).

The Orders under review deal with the allocation of frequency spectrum, in the 806-921 MHz band, to the land mobile radio service, and with the development of regulations pertaining to the future use of that spectrum. Land mobile radio services are radio communication serv- [659] ices, based on land, where either the transmitting or receiving station is mobile.[4]

Such services are of two general types. Public services are operated by common carrier licensees and made available to members of the public. The most common type of public services are radio telephone services which interconnect with existing telephone systems. Private services apparently include all other mobile radio operations, *i. e.*, those not subject to common carrier regulation. They are predominantly dispatch services such as those operated by police departments, fire departments, and taxicab companies, for their own purposes. However, they are not limited to services which an operator provides only to itself, but also extend to services provided to a limited group of users by third party operators.

The 1974 Order, as modified by the 1975 Order, embodies three distinct actions. First, it allocates a total of 40 MHz on the 900 MHz band (825-845 MHz and 870-890 MHz)

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[2] Notice of Inquiry and Notice of Proposed Rule Making, *Land Mobile Use of 806-960 MHz Band*, Docket No. 18262, 14 F.C.C.2d 311 (17 July 1968).

[3] *Land Mobile Radio Service*, Docket No. 18262, 46 F.C.C.2d 752 (1 May 1974).

[4] 47 C.F.R. § 2.1 (1974).

to the development of a nationwide, broad-band "cellular" mobile radio communications system. (Initially, the Commission intends to authorize use of the minimum spectrum needed for developmental systems.)[5] Through the use of expensive and sophisticated new technologies, the cellular system will make possible more traffic intensity per unit of spectrum than do present mobile communication methods. When operative, which will not be before 1978, it is expected greatly to increase capacity for mobile communications in urban areas over what is now available. The cellular system is clearly a public, common carrier system, and will serve primarily to expand the capacity of radio telephone service.

The 1974 Order limited the group of eligible applicants for licenses to operate on these bands, to wireline (telephone) carriers.[6] The 1975 Order removed this limitation and extended eligibility to radio common carriers as well.[7] Any applicant for a license will nonetheless be required to demonstrate that it has the resources and technology for rapid development of a cellular system.[8] As well as providing radio telephone service, cellular systems are to be allowed to engage in dispatch operations.[9] ~~for users qualifying under 47 C.F.R. §§ 89, 91 and 93.~~*

Second, 30 MHz (806-821 MHz and 851-866 MHz) is allocated to private services, to be licensed to operators in the Public Safety, Industrial and Land Transportation areas, as authorized under 47 C.F.R. §§ 89, 91, 93. Thus, under existing regulations, this allocation makes available

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[5] 46 F.C.C.2d at 761.

[6] *Id.* at 760.

[7] 51 F.C.C.2d at 953.

[8] *Id.* at 955.

[9] *Id.* at 952, 46 F.C.C.2d at 761.

* Modification per 22 Jan. 1976 Order of the Court of Appeals.

additional spectrum for eligible applicants who wish to obtain a license to operate a station, either for their own private purposes, or, with several other eligibles, on a non-profit, cost-sharing basis.[10] In addition, the Orders would create a new category of private mobile operators, eligible for licensing on the 30 MHz presently being allocated. This new category of operators, known as Specialized Mobile Radio Systems (SMRS), would operate on a commercial basis to provide service to third parties. [660] Licensing is to be on a first-come, first-served basis, with SMRS applications treated no differently than those of other private applicants.[11] Because it seeks to utilize a profit motive to speed development and refinement of mobile radio technologies, the Commission concludes that SMRS should not be subject to the common carrier regulations of Title II of the Communications Act,[12] and that state certification of SMRS should be pre-empted.[13]

Third and last, the 1975 Order designates the remaining 45 MHz of the total 115 MHz allocation for reserve and future growth.[14] This aspect of the Order is not challenged in this proceeding.

I. *40 MHz Allocation for the Creation of Cellular Systems*

The power to make this allocation of spectrum for the development of sophisticated and band-efficient cellular systems arises, if at all, under 47 U.S.C. § 303(c) and (g) (1970).[15] Section 303 sets forth the Commission's power

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[10] 47 C.F.R. § 89.604 (1974).

[11] 51 F.C.C.2d at 956-57.

[12] 46 F.C.C.2d at 762.

[13] 51 F.C.C.2d at 974.

[14] *Id.* at 946.

[15] 47 U.S.C. § 303(c) and (g) (1970) provides:

> Except as otherwise provided in this chapter, the Commission from time to time, as public convenience, interest, or

and duties in the regulation of radio, and states that the exercise of all powers should be guided by the requirements of "public convenience, interest, or necessity."

The authorizations of powers under subpart (c) to assign bands of frequencies to various classes of stations, and under subpart (g) to provide for experimental uses and encourage the more effective use of radio, appear on their face to justify the allocation at issue here. However, it has been challenged on a variety of grounds, as exceeding the discretion allowed the Commission under the public convenience, interest or necessity standard.

First, the argument is made that the allocation is excessive in light of both the technological requirements for the development of cellular systems, and the extent of need which the system will ultimately satisfy. It appears there is substantial uncertainty as to how much spectrum will be necessary or desirable for the functioning of cellular systems, which are now in the developmental stage at least three years away from operation. In its tentative First Report, which preceded the 1974 and 1975 Orders now under review, the Commission proposed an allocation of 75 MHz.[16] After substantial negative comment was re-

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necessity requires, shall——

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(c) Assign bands of frequencies to the various classes of stations, and assign frequencies for each individual station and determine the power which each station shall use and the time during which it may operate;

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(g) Study new uses for radio, provide for experimental uses of frequencies, and generally encourage the larger and more effective use of radio in the public interest.

[16] First Report and Order, *Spectrum Space for Land Mobile Services*, Docket No. 18262, 19 Pike & Fischer R.R.2d 1663, 1664 (1970).

ceived, including reports by the Department of Justice [17] and the Office of Telecommunications Policy,[18] the conclusion [661] was reached in the 1974 Order to reduce the allocation to 40 MHz.[19]

AT & T, which initially proposed the cellular system and is the company now most deeply involved in its development, argued in response to that Order for an increase of the allocation to 64 MHz. It argued that the proposed reduction to 40 MHz would substantially increase the implementation cost of "attractive" design features then under development.[20] At the other extreme, the Report of the Office of Telecommunications Policy, written in 1973, concludes that 14 MHz should be adequate for the development of a cellular system to meet projected mobile telephone needs.[21]

The Orders under review reveal that the Commission has given serious consideration to the arguments raised as to the extent of the allocation.[22] They reveal also that the determination of how much band width to allocate to cellular systems is at once a highly technical and somewhat speculative undertaking. The amount of spectrum that is appropriate depends upon an estimate of the nature and capabilities of technology that is now only partially devel-

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[17] Letter (undated) from the Assistant Attorney General, Antitrust Division, U. S. Department of Justice (hereinafter Justice Dept. Report). (J.A. at 345-353).

[18] Letter dated 17 August 1973, from the Director, Office of Telecommunications Policy, and enclosed comments (hereinafter OTP Report). (J.A. at 328-44).

[19] 46 F.C.C.2d at 756.

[20] 51 F.C.C.2d at 948.

[21] (J.A. at 333). Also, Motorola has argued in some detail that an allocation of 19 MHz would be sufficient. Motorola Reply Comments at 68-84. (J.A. at 245-70).

[22] 51 F.C.C.2d at 948; 46 F.C.C.2d at 756-57.

oped, and upon projected demands for radio telephone service.

We conclude that such determinations are precisely the sort that Congress intended to leave to the broad discretion of the Commission, by imposing a broad public convenience, interest, or necessity standard. In cases of such broad delegations to expert agencies, the standard of review is that of the reasonableness of the conclusions reached.[23] In light of the wide ranging arguments as to appropriate spectrum width, we cannot say that the allocation of 40 MHz to this experimental mobile radio system was either unreasonably large or unreasonably small.

More substantial arguments are raised pertaining to possible anticompetitive effects of the 40 MHz allocation. It is alleged, first that the allocation will prove in effect to be a grant to the Bell system of monopoly power over the urban radio telephone market. Second, it is stated that the authorization of dispatch service (in all but fleet-dispatch capacities)[24] to be performed by cellular systems will result in a substantial impairment of competition in the now highly competitive dispatch market. Both of these results are said to put the Order in violation of the antitrust component of the public convenience, interest or necessity standard.[25]

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[23] *United States* v. *Allegheny-Ludlum Steel Corp.*, 406 U.S. 742, 749, 92 S.Ct. 1941, 32 L.Ed.2d 453 (1972); *S. E. C.* v. *New England Elec. Sys.*, 390 U.S. 207, 211, 88 S.Ct. 916, 19 L.Ed.2d 1042 (1968); *Gray* v. *Powell*, 314 U.S. 402, 411, 62 S.Ct. 326, 86 L.Ed. 301 (1941).

[24] 51 F.C.C.2d at 952 and n. 16; 46 F.C.C.2d at 761.

[25] There is a good deal of authority for the proposition that competitive factors may properly be considered by the Commission under the public convenience, interest or necessity standard. *See United States* v. *R. C. A.*, 358 U.S. 334, 351, 79 S.Ct. 457, 3 L.Ed.2d 354 (1959); *F. C. C.* v. *R. C. A. Comm., Inc.*, 346 U.S. 86, 94, 73 S.Ct. 998, 97 L.Ed. 1470 (1953); *N. B. C.* v. *United States*, 319

[662] On the face of the record, there appears to be a significant plausibility of both of these assertions. While the Order provides for separate licensing of individual cellular systems, and no explicit grant of monopoly rights to AT & T is made, there is good reason to believe that AT & T will operate most, if not all, of the cellular systems eventually put in operation. The cellular system was initially proposed by AT & T[26] in response to the Commission's First Notice of Inquiry on this Docket, and AT & T has already made a substantial investment in its development. In spite of the 1975 Order's determination to allow other than wireline carriers to compete for the opportunity to operate cellular systems, the Commission itself still believes that only wireline carriers will be able to demonstrate that they have the resources and expertise which are a prerequisite to licensing.[27]

If it is thus true that AT & T is the likely recipient of a virtual monopoly in the operation of cellular systems, this will result in significant increases in its market power, where cellular systems are operative, in two fields apart from traditional wireline communications.

First, AT & T appears likely to dominate substantially the field of radio telephone service, which has heretofore been occupied in significant part by small radio common carriers operating in a highly competitive environment.[28]

U.S. 190, 223, 63 S.Ct. 997, 87 L.Ed. 1344 (1943); *Radio Relay Corp.* v. *F. C. C.*, 409 F.2d 322, 326 (2d Cir. 1969). *But see Hawaiian Telephone Co.* v. *F. C. C.*, 162 U.S.App.D.C. 229, 235, 498 F.2d 771, 777 (1974) (F.C.C. may not "automatically equate the public interest with additional competition.").

Whether and to what extent decisions of the Commission are reversible for failure to consider particular factors is much less clear.

[26] 46 F.C.C.2d at 753-54.

[27] 51 F.C.C.2d at 953.

[28] OTP Report, *supra* note 18, at 8 (J.A. at 337).

This threat is made more severe by the 1975 Order's elimination of a requirement that wireline operators offer to interconnect radio common carriers into their systems.[29] Such substantial domination would be undesirable both because it would weaken incentives for development of improved mobile radio systems,[30] and because it would enhance the already enormous overall economic power of the Bell System.

Second, AT & T will become a significant force in the now highly competitive market for private dispatch services.[31] [663] Whether it will be able to dominate that market presently appears difficult to determine. One sig-

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[29] 51 F.C.C.2d at 946. *See* OTP Report, *supra* note 18, at 12 (J.A. at 341); Justice Dept. Report, *supra* note 17, at 7 (J.A. at 351).

This part of the Commission's decision is somewhat puzzling. A substantial anticompetitive impact seems almost inevitable and the Commission has given no justification for dropping the interconnection requirement except to say that such interconnection is "unnecessary" in light of its decision not to license trunked systems. We agree with the original recommendations of the Office of Telecommunications Policy and the Justice Department that nondiscriminatory interconnections must be assured, but await the proof by the results.

[30] Justice Dept. Report, *supra* note 17, at 2 (J.A. at 346).

[31] It is unclear whether the authorization to engage in dispatch service is in violation of the 1956 Western Electric consent decree. That decree bars AT & T from engaging "in any business other than the furnishing of common carrier communications services," but excepts from the bar "services incidental to the furnishing . . . of common carrier communications services." *United States* v. *Western Elec. Co.*, Civ. No. 17-49, 1956 Trade Cas. ¶ 68,246, at 71,138 (D.N.J. 1956).

Because of our general disposition of these competitive issues, *see infra*, we reserve for decision in a future case the issues of whether the dispatch services to be carried on by AT & T can be characterized as "common carrier communications services," and if not, whether the dispatch services carried on are "incidental."

nificant factor is the extent to which AT & T's other communications activities may facilitate its operations in the dispatch market.[32]

Although the Commission has included in the 1975 Order certain actions that are designed to minimize possible anticompetitive effects of the Order, it seems likely that they will prove largely cosmetic. These actions do little or nothing to curtail the projected market power of AT & T in either cellular system or dispatch operations. In particular, the 1975 Order requires that separate companies be established for the operation of cellular systems, and that separate account books and payrolls be maintained.[33] This requirement is designed to prevent cross-subsidization of the activities of the cellular system by profits of the parent corporation, as might make possible predatory behavior against radio common carriers or private dispatch operators. However, even perceived most favorably, this action does nothing except attempt to make financially impossible with AT & T capital predatory behavior which is already illegal and subject to prosecution under the antitrust laws.[34]

The 1975 Order also imposes certain restrictions on the manufacture, provision, and servicing of equipment for

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[32] *See* Justice Dept. Report, *supra* note 17, at 6. (J.A. at 350) (asserting that "[t]he advantages adherent in the telephone service monopoly enjoyed by the wireline carriers vis-a-vis potential competitors in other communications services are competitively significant.").

[33] 51 F.C.C.2d at 951.

[34] Cutting prices below marginal cost in order to discourage competition is the most blatant form of predatory behavior and, at least where the price cutter holds significant market power, is subject to attack under Sherman Act § 2, 15 U.S.C. § 2 (1970). *E. g., Standard Oil Co.* v. *United States*, 221 U.S. 1, 43, 31 S.Ct. 502, 55 L.Ed. 619 (1910). *See* Areeda & Turner, *Predatory Pricing and Related Practices Under Section 2 of the Sherman Act*, 88 Harv.L.Rev. 697 (1975).

cellular system operations. Were stringent regulations imposed to exclude wireline operators from these related fields, they might result in other corporations becoming involved in these manufacture and service functions. Even then, however, though they would keep AT & T out of these other fields, they would do nothing to increase competition for licensing of cellular systems, or to improve the competitive situation in the dispatch market.

Even the modest expectation of increasing competition in the manufacture, supply and maintenance of equipment is made doubtful by the narrow scope of the limits imposed by the 1975 Order.[35] First, the restrictions apply only with regard to mobile equipment, and not to the base station equipment now under development by AT & T. There appears to be no substantial expectation that any independent sources for base station equipment will be developed. Second, the 1975 Order eliminated the 1974 Order's bar on supply and maintenance (as distinguished from manufacture) of mobile equipment by wireline carriers, and stated that there would be no automatic bar to use of carrier-manufactured mobile equipment in the developmental systems.[36] The only clear restriction remaining is a general bar on manufacture of mobile equipment by wireline carriers, and that will not have unexceptioned application until the systems become gener- [664] ally operative, which will not be for at least several years.

In spite of our conclusion that significant anticompetitive effects may well result in the form of AT & T monopolization of cellular operations and impairment of the now highly competitive dispatch market, the court holds that the 40 MHz allocation is not, at this time, a

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[35] 51 F.C.C.2d at 951-52.

[36] *Id.* at 952.

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breach of the broad discretion [37] allocated to the Commission under the statute. The anticompetitive effects envisioned above are contingent upon a variety of factors surrounding the development and implementation of cellular technology. Thus far, the Commission has stated its clear intention to authorize only a developmental system in the Chicago area, which will utilize only 12.5 MHz of the 40 MHz allocation. The Commission retains a duty of continual supervision of the development of the system as a whole, and this includes being on the lookout for possible anticompetitive effects.[38] The serious anticompetitive effects, if they arise at all, will do so only after full implementation begins.

We are strongly influenced by the position of the Justice Department in full support of the proposed F. C. C. Orders.[39] It is true that the Justice Department has expressed reservations about several elements of the 1974 Order, and that the 1975 Order does not fully ameliorate several of Justice's concerns.[40] Nonetheless, the Depart-

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[37] The substantial discretion generally allowed the F. C. C. in determining both what and how it can properly regulate, is often attributed to the highly complex and rapidly expanding nature of communications technology. Because Congress could neither foresee nor easily comprehend the fast-moving developments in the field, it "gave the Commission not niggardly but expansive powers." *N. B. C.* v. *United States*, 319 U.S. 190, 219, 63 S.Ct. 997, 1010, 87 L.Ed. 1344 (1943); *United States* v. *Southwestern Cable Co.*, 392 U.S. 157, 172-73, 88 S.Ct. 1994, 20 L.Ed.2d 1001 (1968); *F. C. C.* v. *Pottsville Broadcasting Co.*, 309 U.S. 134, 138, 60 S.Ct. 437, 84 L.Ed. 656 (1940); *Philadelphia Television Broadcasting Co.* v. *F. C. C.*, 123 U.S.App.D.C. 298, 300, 359 F.2d 282, 284 (1966).

[38] *See* note 25 *supra*.

[39] Respondent's Brief is filed jointly by the F. C. C. and the Justice Department.

[40] In particular, the Order authorizes entry of wireline carriers into the dispatch market, and eliminates any requirement that wireline carriers extend non-discriminatory interconnection rights

ment is apparently satisfied that the Order as a whole poses no immediate and substantial competitive problems. Their action, like ours, would appear to be based in part on the view that there will be ample opportunity to challenge anticompetitive effects as the time approaches when they will be felt, and the extent of the impact on competition becomes more readily assessable. The Justice Department no doubt will make a continuing assessment.

Our affirmance of the 40 MHz allocation for the development of a cellular common carrier system is with the implicit recognition that it may be subject to successful challenge at some future date. It is the broad statutory power of the Commission to experiment and encourage new uses of radio,[41] coupled with the lack of urgency surrounding the projected anticompetitive effects, which leads us to our conclusion. We do not hold that the projected effects considered above would not constitute a breach of the antitirust component of the public convenience, interest and necessity [665] standard,[42] were they more immediate in time or more susceptible of precise assessment. Nor do we make any comment with regard to the particular applicability of antitrust statutes, which issue is not presently before us.[43]

II. *30 MHz Allocation for Use by Private Mobile Service, Including a New Class of Entrepreneurial Operators Known as Specialized Mobile Radio Systems (SMRS)*

The aspect of the 30 MHz allocation which is challenged is the authorization of a new category of entrepreneurial

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to all providers of land mobile services. *See* Justice Dept. Report, *supra* note 17, at 6, 7 (J.A. at 350-51).

[41] 47 U.S.C. 303(g) (1970).

[42] *See* note 7-3 *supra*.

[43] Under 47 U.S.C. § 313(a) (1970), the antitrust laws are fully applicable to the manufacture, sale and trade in radio apparatus, and to interstate or foreign radio communications.

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mobile operators who will share access to the allocated spectrum with private operators eligible under the Public Safety, Industrial and Land Transportation Radio Services.[44] Private operations involve primarily dispatch services which the operator provides to himself, such as those provided by police departments and taxicab companies. Prior to the present Order, they have also included systems operated on a ~~non-profit~~ * cooperative basis for the benefit of several affiliated users.[45] The significant action taken under the present Order is the assimilation, with the above operations, of profit-motivated systems run [by an entrepreneur]* solely for the use of third party clients.

In authorizing the creation of these entrepreneurial Specialized Mobile Radio Systems (SMRS), the Commission seeks to deal with them precisely as it deals with the more traditionally private mobile operators.[46] Applications of

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[44] *See* 47 C.F.R. §§ 89, 91, and 93 (1974).

* [45] ~~47 C.F.R. § 89.604(a) and (b) (1974) set forth the authorizations for two types of cooperative enterprises which predate the Orders in Docket No. 18262. In one type, several operators are separately licensed to use a single system. This individual licensing appears to fall within the conventional licensing provison of § 89.604(a). The less conventional, non profit operation of a system by a single, third party licensee is authorized under § 89.604(b).~~ [Under 47 C.F.R. § 89.604(a) and (b), several operators may be separately licensed to use a single system.] Such systems, known as "community repeaters," were explicitly approved by the Commission in 1970. Memorandum Opinion and Order, *Multiple Licensing—Safety and Special Radio Services*, Docket No. 18921, 24 F.C.C.2d 510 (15 July 1970).

[46] 51 F.C.C.2d at 956-57. In processing applications for use of the 30 MHz allocated by this Order, the Commission intends to consider those of commercial enterprises "on the same basis" as those of applicants for "private or shared communication facilities." 47 C.F.R. § 89.803(b) (as amended per 1975 Order, 51 F.C.C.2d at 999).

* Modification per 22 Jan. 1976 Order of the Court of Appeals.

all private operators including SMRS, are to be processed, up to spectrum capacity, on a first-come, first-served basis.[47] Believing that competition between many operators is the best way to hasten the development of improved technologies, the Commission seeks to treat SMRS, like all other private operators, as non-common carriers, and to pre-empt state regulation of entry.

The non-common carrier classification is the pivot upon which the Commission's scheme for regulating SMRS turns. It makes clearly inapplicable the stringent rate and service regulations of the Title II Common Carrier provisions.[48] Also, it renders inapplicable certain provisions of [666] Title III (Radio Licensing), which require a 30-day waiting period prior to the granting of any application[49] and which guarantee the right to petition for denial of the application.[50] Finally the classification as non-common carriers appears to have certain effects on the power of federal pre-emption, which power the Commission has sought to exercise here by barring state entry regulation.

A. *Classification of SMRS as Non-Common Carriers*

1. *Statutory Definition of Common Carrier*

For purposes of the Communications Act, a common carrier is "any person engaged as a common carrier for

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[47] 51 F.C.C.2d at 957.

[48] 47 U.S.C. §§ 201-05 (1970). We do not here hold that the Commission is required to exercise its affirmative Title II powers wherever a common carrier within its jurisdiction is found to exist. We only hold that the language of that Title becomes applicable, and leave to a case presenting that issue the problem of whether Title II powers are mandatory or discretionary.

[49] 47 U.S.C. § 309(b) (1970).

[50] 47 U.S.C. § 309(d) (1970). Section (d) applies to the categories set forth in section (b).

hire. . . ." [51] The Commission's regulations offer a slightly more enlightening definition: "any person engaged in rendering communication service for hire to the public." [52] However, the concept of "the public" is sufficiently indefinite as to invite recourse to the common law of carriers to construe the Act.

In seeking an applicable common law definition of common carrier, a good deal of confusion results from the long and complicated history of that concept. Originally, the doctrine was used to impose a greater standard of care upon carriers who held themselves out as offering to serve the public in general. The rationale was that by holding themselves out to the public at large, otherwise private carriers took on a quasi-public character. This character, coupled with the lack of control exercised by shippers or travellers over the safety of their carriage, was seen to justify imposing upon the carrier the status of an insurer.[53]

The late nineteenth century saw the advent of common carriers being subjected to price and service regulations as well. At first challenged as deprivations of property without due process, these early regulations were upheld on the basis of the near monopoly power exercised by the railroads, coupled with the fact that they "exercise a sort of public office" in the duties which they perform.[54] Sub-

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[51] 47 U.S.C. § 153(h) (1970).

[52] 47 C.F.R. § 21.1 (1974).

[53] This insurance obligation has never been unexceptioned, and has not extended to acts of God, damages resulting from warfare, or causes beyond the control of the carrier which are expressly excepted in the bill of lading. *Propeller Niagara* v. *Cordes*, 62 U.S. (21 How) 7, 23, 16 L.Ed. 41 (1858).

[54] *Munn* v. *Illinois*, 94 U.S. (4 Otto) 113, 130, 24 L.Ed. 77 (1876). For an historical discussion of the idea that businesses affected with a public interest are subject, on that account, to governmental

sequently, legislation has been upheld imposing stringent regulations of various types on entities found to be affected with a public character, even where *nothing approaching monopoly* power exists. In such cases as the Motor Carrier Act of 1935,[55] relatively competitive carrying industries have been subjected to entry, rate and equipment regulations on the basis of the quasi-public character of the activities involved.[56]

Whether the common carrier concept is invoked to support strict tort liability or as a justifying basis for regulation, it appears that the critical point is the qua- [667] si-public character of the activity involved. To create this quasi-public character, it is not enough that a carrier offer his services for a profit, since this would bring within the definition private contract carriers which the courts have emphatically excluded from it.[57] What appears to be essential to the quasi-public character implicit in the common carrier concept is that the carrier "undertakes to carry for all people indifferently . . . ."[58]

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regulation, see McAllister, *Lord Hale and Business Affected with a Public Interest*, 43 Harv.L.Rev. 759 (1930).

[55] 49 U.S.C. §§ 301-27 (1970).

[56] *See American Trucking Ass'ns, Inc.* v. *United States*, 101 F. Supp. 710 (N.D.Ala. 1951) (upholding the Act against Constitutional challenge).

[57] *Home Ins. Co.* v. *Riddell*, 252 F.2d 1 (5th Cir. 1958); *Ciaccio* v. *New Orleans Public Belt. R. R.*, 285 F.Supp. 373 (E.D.La. 1968).

[58] *Semon* v. *Royal Indemnity Co.*, 279 F.2d 737, 739 (5th Cir. 1960); *Home Ins. Co.* v. *Riddell*, 252 F.2d 1, 3 (5th Cir. 1958); *Ciaccio* v. *New Orleans Public Belt R.R.*, 285 F.Supp. 373, 375 (E.D.La. 1968); *State* v. *Sinclair Pipe Line Co.*, 180 Kan. 425, 304 P.2d 930, 941 (1957); *Utilities Comm.* v. *Gulf Atlantic Towing Corp.*, 251 N.C. 105, 110 S.E.2d 886, 889 (1959).

The following cases state the test in similar wording, while not finding that a given carrier was a non-common carrier: *Washing-*

This does not mean a given carrier's services must practically be available to the entire public. One may be a common carrier though the nature of the service rendered is sufficiently specialized as to be of possible use to only a fraction of the total population. And business may be turned away either because it is not of the type normally accepted or because the carrier's capacity has been exhausted. But a carrier will not be a common carrier where its practice is to make individualized decisions, in particular cases, whether and on what terms to deal.[59] It is not necessary that a carrier be required to serve all indiscriminately; it is enough that its practice is, in fact, to do so.[60]

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ton ex rel. Stimson Lumber Co. v. *Kuykendall*, 275 U.S. 207, 211, 48 S.Ct. 41, 72 L.Ed. 241 (1927); *Terminal Taxicab Co.* v. *Kutz*, 241 U.S. 252, 255, 36 S.Ct. 583, 60 L.Ed. 984 (1916); *Grace Line, Inc.* v. *F. M. B.*, 280 F.2d 790, 792 (2d Cir. 1960); *Arrow Aviation, Inc.* v. *Moore*, 266 F.2d 488, 490 (8th Cir. 1959); *Circle Express Co.* v. *Commerce Comm.*, 249 Iowa 651, 86 N.W.2d 888, 893 (1957); *State ex rel. Anderson* v. *Witthaus*, 340 Mo. 1004, 102 S.W.2d 99, 102 (1937); *Ferguson Trucking Co.* v. *Rogers Truck Line*, 164 Neb. 85, 81 N.W.2d 915, 922 (1957).

The F. C. C. has expressed a similar view of the common carrier concept as applied to communications. "[T]he fundamental concept of a communications common carrier is that such a carrier makes a public offering to provide, for hire, facilities by wire or radio whereby all members of the public who choose to employ such facilities may communicate or transmit intelligence of their own design and choosing . . . ." Report and Order, *Industrial Radiolocation Service*, Docket No. 16106, 5 F.C.C.2d 197, 202 (5 October 1966).

[59] *Semon* v. *Royal Indemnity Co.*, 279 F.2d 737, 739-40 (5th Cir. 1960).

[60] *Washington ex rel. Stimson Lumber Co.* v. *Kuykendall*, 275 U.S. 207, 211-12, 48 S.Ct. 41, 42, 72 L.Ed. 241 (1927), ("a common carrier is such by virtue of his occupation, not by virtue of the responsibilities under which he rests."); *See Lone Star Steel Co.* v. *McGee*, 380 F.2d 640, 647-48 (5th Cir. 1967).

This requirement, that to be a common carrier one must hold oneself out indiscriminately to the clientele one is suited to serve, is supported by common sense as well as case law. The original rationale for imposing a stricter duty of care on common carriers was that they had implicitly accepted a sort of public trust by availing themselves of the business of the public at large. The common carrier concept appears to have developed as a sort of *quid pro quo* whereby a carrier was made to bear a special burden of care, in exchange for the privilege of soliciting the public's business.

Moreover, the characteristic of holding oneself out to serve indiscriminately appears to be an essential element, if one is [668] to draw a coherent line between common and private carriers. The cases make clear both that common carriers need not serve the whole public,[61] and that private carriers may serve a significant clientele, apart from the carrier himself.[62] Since given private and common carriers may therefore be indistinguishable in terms of the clientele actually served, it is difficult to envision a sensible line between them which does not turn on the manner and terms by which they approach and deal with their customers. The common law requirement of holding oneself out to serve the public indiscriminately draws such a logical and sensible line between the two types of carriers.

Finally, the holding out prerequisite to common carrier status is not without implicit support in the F. C. C. Regulations themselves. In defining "public correspondence," the Regulations focus upon the element of being at the disposal of the public.[63] Unlike "public correspondence,"

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[61] *Terminal Taxicab Co.* v. *Kutz*, 241 U.S. 252, 255, 36 S.Ct. 583, 60 L.Ed. 984 (1927).

[62] *Home Ins. Co.* v. *Riddell*, 252 F.2d 1, 4 (5th Cir. 1958).

[63] "Public correspondence. Any telecommunication which the offices and stations, by reason of their being at the disposal of the public, must accept for transmission." 47 C.F.R. § 21.1 (1974).

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"private line service" is distinguished by its being set aside for the use of particular customers, so as not to be generally available to the public."[64] This public-private dichotomy is generally regarded as synonymous with the distinction between common carrier and non-common carrier operators.

2. *Application of Common Carrier Definition to SMRS*

In order to overturn the Commission's classification of SMRS as non-common carriers, the Court must find a substantial likelihood that SMRS will hold themselves out to serve indifferently those who seek to avail themselves of their particular services. It is not an obstacle to common carrier status that SMRS offer a service that may be of practical use to only a fraction of the population, nor that the Order limits possible subscribers to SMRS services to eligibles under Sections 89, 91 and 93 of the Regulations.[65] The key factor is that the operator offer indiscriminate service to whatever public its service may legally and practically be of use. In making this determination, we must inquire, first, whether there will be any legal compulsion thus to serve indifferently, and if not, second, whether there are reasons implicit in the nature of SMRS operations to expect an indifferent holding out to the eligible user public.

As to possible regulatory compulsion, there is no indication in the proposed regulations that SMRS are to be in any way compelled to serve any particular applicant, or that their discretion in determining whom, and on what

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[64] "Private line service. A service whereby facilities for communication between two or more designated points are set aside for the exclusive use or availability for use of a particular customer and authorized users during stated periods of time." 47 C.F.R. § 21.1 (1974).

[65] 47 C.F.R. § 89.604(e) (as amended per 1975 Order, 51 F.C.C.2d at 993).

terms, to serve, is to be in any way limited. The application provisions require that SMRS applicants certify that they will not provide service to ineligibles, but say nothing about any obligation to provide services to eligibles who [669] seek them.[66] Nor does the section setting forth limitations on mode of operation contain any such provision.[67]

Nor is there evidence in the administrative scheme of an implicit intent so to require. The Order evidences a clear intent not to discriminate between any of the types of "private" operators, including SMRS, in the granting of license applications.[68] It would appear that the FCC might have made special provision assuring adequate allocation to SMRS particularly, if SMRS were regarded as performing some public access function not performed by the other types of "private" systems.

Finally, the fact that the same Order provides for performance of dispatch services by cellular common carriers [69] suggests that any Commission concern about free public access to dispatch services may have been dealt with by authorizing dispatch services by common carrier who, due to their general status as common carriers, arguably cannot discriminate against particular users.

Since one may be a common carrier by holding oneself out as such, we must inquire further whether there is good reason to believe that SMRS will in fact serve the user public more or less indifferently, even absent any regula-

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[66] 47 C.F.R. § 89.702(a)(2) (as amended per 1975 Order, 51 F.C.C.2d at 996-97).

[67] 47 C.F.R. § 89.655 (as amended per 1975 Order, 51 F.C.C.2d at 995-96).

[68] 47 C.F.R. § 89.803(b) (as amended per 1975 Order, 51 F.C.C.2d at 999).

[69] 51 F.C.C.2d at 952.

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tory compulsion to do so. At the outset it appears that this inquiry must be highly speculative, both because no operating SMRS are now in existence, and because the parties have not addressed in any detail the issue of the prospective SMRS business operations.

The nature of the dispatch services which SMRS will primarily offer appear necessarily to involve the establishment of medium-to-long-term contractual relations, whereby the SMRS supply the needs of users for dispatch facilities for a period of time.[70] In such a situation, it is not unreasonable to expect that the clientele might remain relatively stable, with terminations and new clients the exception rather than the rule. It might even be that the turnover will be sufficiently minor that, except for the commercial mode of operation, SMRS will be much like nonprofit community repeaters.[71] "Repeaters" are required on application to submit the names and addresses of all cost-sharing participants,[72] which would seem to indicate a high level of stability among those employing the service.

If the SMRS business is as hypothesized above, and nothing in the briefs or argument indicates otherwise, there would appear to be little reason to expect any sort of holding out to the public at all. Moreover, even as openings arise, there may be many reasons that the operator would desire and expect to negotiate with and select future clients on a highly individualized basis. The operator may be concerned about the personal and operational compatibility of a given applicant vis-a-vis the SMR system as a whole and the other clients already using it. Methods of operation and time demands may be highly individualized and

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[70] *See* 47 C.F.R. § 89.702(a)(2)(iii) (as amended per 1975 Order, 51 F.C.C.at 2d 997) (making clear that SMRS business will be done under written contract).

[71] *See* note 45 *supra*.

[72] 47 C.F.R. § 89.702(a)(2)(iii) (1974).

[670] may be a very sound basis for accepting or rejecting an applicant, when considered in light of the methods already being employed and the particular time demands already being put on the system.[73]

We therefore conclude that nothing in the record indicates any significant likelihood that SMRS will hold themselves out indifferently to serve the user public. While it is undisputed that they would be permitted so to hold themselves out if they desired, that is not sufficient basis for imposing the burdens that go with common carrier status. In so holding, we do not foreclose the possibility of future challenge to the Commission's classification, should the actual operations of SMRS appear to bring them within the common carrier definition.

Further, we reject those parts of the Orders which imply an unfettered discretion in the Commission to confer or not confer common carrier status on a given entity, depending upon the regulatory goals it seeks to achieve.[74] The common law definition of common carrier is sufficiently definite as not to admit of agency discretion in the classi-

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[73] For example, an operator might be in a position to accept an applicant whose primary needs are between certain hours, but to reject one whose needs are different. See 51 F.C.C.2d at 965-66, for further discussion of the way that different systems may be suited to different users and different user needs.

[74] The strongest statement of this sort is in the 1974 Order:

> We are fully aware . . . that some of the entities we propose to license, *i.e.*, entrepreneur-operated, common-user systems, could be licensed as common carriers and regulated under Title II of the Communications Act. However, our basic goal in this proceeding is . . . to make available to the land mobile service additional spectrum and to do this in a way that would promote the larger and more effective use of this spectrum. . . . In accomplishing this goal, we are free, we believe, to adopt whatever comprehensive regulatory scheme is best suited for the purpose." 46 F.C.C.2d at 763-64. *See also* 51 F.C.C.2d at 957-59.

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fication of operating communications entities. A particular system is a common carrier by virtue of its functions, rather than because it is declared to be so.[75] Thus, we affirm the Commission's classification not because it has any significant discretion in determining who is a common carrier, but because we find nothing in the record or the common carrier definition to cast doubt on its conclusions that SMRS are not common carriers.[76] If practice and experience show the SMRS to be common carriers, then the Commission must determine its responsibilities from the language of the Title II common carrier provisions.

[671] Finally, we reject any implications in the Orders[77] and argument of the Commission that there is any mutual exclusivity of application of the Title II Common Carrier provisions and the Title III provisions pertaining to Radio. It may be true that when enacted, the two titles were seen as applying to two largely discrete realms of activity.[78] Certainly radio technology had not, by 1934,

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[75] *United States* v. *California*, 297 U.S. 175, 181, 56 S.Ct. 421, 80 L.Ed. 567 (1936); *Lone Star Steel Co.* v. *McGee*, 380 F.2d 640, 648 (5th Cir. 1967).

But see Philadelphia Television Broadcasting v. *F.C.C.*, 123 U.S. App. D.C. 298, 300, 359 F.2d 282, 284 (1966) (upholding F.C.C. classification of cable T.V. as a non-common carrier: "[D]eference to the agency's interpretation of its governing statute is reinforced where, as here, the legislative history is silent, or at best unhelpful, with respect to the point in question.")

[76] The statements of the Order can be made to square with the view of this court, if they are read to mean that the Commission could have treated SMRS as common carriers by imposing on them requirements which would have made them common carriers. Without asserting that this was the Commission's meaning, it is clear that the Commission had discretion to require SMRS to serve all potential customers indifferently, thus making them common carriers within the meaning of the statute.

[77] *See* 46 F.C.C.2d at 763.

[78] *See* IV *B. Schwartz, The Economic Regulation of Business and Industry* 2374 (1973).

achieved large scale application in the common carriage area, and was largely limited to the broadcast activities which were originally the primary target of Title III. Nonetheless, the language of Title II, from time of first enactment, extended its coverage to common carriage "by wire or radio".[79]

Moreover, the result of a radio operator being held subject to Title II is not to create any conflict with the already applicable provisions of Title III, which basically allow for licensing of transmitting stations in the public interest.[80] It is rather to make additionally applicable certain provisions including those dealing with non-discriminatory service and charges,[81] liability for damages,[82] special corporate obligations and duties of common carriers,[83] and right to petition for denial of an application.[84] Therefore, if it is at some time demonstrated that SMRS are actually common carriers, there is nothing in the statute to prevent their regulation under both Titles II and III.

B. *Impact of Non-Common Carrier Status on Federal Regulation*

Our decision to uphold the Commission's classification of SMRS as non-common carriers leads directly to the affirmance of the Orders, insofar as they create a scheme of Federal regulation In essence, the Commission seeks to license SMRS on a first-come, first-served basis, out of a pool which includes, as well, all individual and system-sharing eligibles under 47 C.F.R. §§ 89, 91 and 93. While

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[79] 47 U.S.C. § 201 (1970).

[80] 47 U.S.C. § 303 (1970).

[81] 47 U.S.C. §§ 201-05 (1970).

[82] 4 7U.S.C. §§ 206-09 (1970).

[83] 47 U.S.C. §§ 210-12 (1970).

[84] 47 U.S.C. § 309(b) and (d) (1970).

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the Commission expects to pass upon the legal and technical qualifications of applicants, it does not plan to examine their financial qualifications.[85] Most importantly, the Commission intends to leave SMRS free of all federal regulation which would follow as a result of common carrier status.

There is no facial violation of the statute resulting from any of these actions, once the conclusion is reached that SMRS are not common carriers. Obviously, the Title II common carrier provisions are inapplicable, as are certain provisions of Title III which apply only to common carriers.[86]

Also, the provision of 47 U.S.C. § 308(b) authorizing consideration of factors of "citizenship, character, and financial, technical and other qualifications . . ." is not violated because it does not require scrutiny of an applicant's financial fitness. That section leaves it within the discretion of the Commission to decide which facts relating to such [672] factors it wishes to have set forth in applications. Since this leaves the Commission free to have no facts set forth on any of these matters, if it finds such action appropriate, it follows necessarily that the Commission is not required to consider financial fitness if it deems it irrelevant to its regulatory scheme.[87]

Nor, going beyond the words of the statute, can we conclude that in authorizing the creation of SMRS which are not required to behave and thus be regulated, as common carriers, that the F.C.C. has breached the broad discretion

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[85] 51 F.C.C.2d at 957.

[86] Sections 309(b), (d), dealing with delay before granting an application and right to petition for denial of an application, apply to several classes of stations, but only the common carrier classification is potentially relevant to SMRS. 47 U.S.C. § 309(b), (d) (1970).

[87] 47 U.S.C. § 308(b) (1970). *See also* 51 F.C.C.2d at 960.

granted it with regard to radio under the "public convenience, interest and necessity" standard. The Commission has concluded that a competitive environment is the best and most feasible way to achieve its goal of most efficient development and use of the 900 MHz band. The 1975 Order reveals an in-depth consideration of the effects of such a competitive approach [88] so that we cannot say that the F.C.C. may not have "given reasoned consideration to each of the pertinent factors." [89]

The allegation of a breach of discretion in failing to give adequate consideration to possible anticompetitive effects is likewise without merit. While it is true that Motorola enjoys substantial domination of the sales market for mobile radio systems, that fact does not confer upon any aspect of the Order a clear anticompetitive character. Motorola is to be allowed to apply for licensing to operate SMRS. Although the company's longstanding expertise in the field of mobile radio certainly will not impair its efforts to operate such systems, no reason has been made known to us why it should be of any substantial competitive advantage either.[90]

Motorola's substantial size and financial power is, of course, a factor which could discourage competition, especially if most SMRS (and private dispatch) operators are relatively small. However that potential threat arises from economic power alone and not from any of Motorola's mobile radio-related activities. It is a factor which the Com-

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[88] 51 F.C.C. at 967-71.

[89] *Permian Basin Area Rate Cases*, 390 U.S. 747, 792, 88 S.Ct. 1344, 1373, 20 L.Ed2d 312 (1968). *See Hawaiian Telephone Co.* v. *F.C.C.*, 162 U.S.App. D.C. 229, 234-35, 498 F.2d 771, 776-77 (1974).

[90] *See* OTP Report, *supra* note 18, at 11 (J.A. at 340): "We see no justification for excluding mobile radio equipment manufacturers and suppliers from the operation of mobile communications systems, whether multi-user systems for hire or otherwise."

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mission must keep under scrutiny, and it may give cause at some point for adoption of more exclusive licensing policies. Also, it may provide cause for independent antitrust actions. However, on the present record, no such anticompetitive effects have been shown as would constitute a colorable violation of the antitrust component of the public convenience, interest or necessity standard.[91]

C. *Impact of Non-Common Carrier Status on Aspects of The Order Relting to State Regulation*

The 1975 Order pre-empts possible assertion of state entry certification over SMRS.[92] This action appears rea- [673] sonably necessary in order to create the atmosphere of free entry and competition which the Commission has determined is desirable as a means of maximizing the development of mobile radio technology.[93] Because we have held above that the Commission's treatment of SMRS, from the standpoint of federal law, is within its broad discretion under Title III, it follows that any state regulation inconsistent with the policy adopted may be pre-empted, unless such preemption is explicitly prohibited by statute. Petitioners point to two sections of the Communications Act which they say bar federal pre-emption by denying any Commission jurisdiction over certain areas regulated by the states.

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[91] *See* note 25 *supra*.

[92] 51 F.C.C.2d at 974. The 1974 Order had pre-empted all state regulation of SMRS operations. In limiting the pre-emption to entry certification, the 1975 Order expresses the hope "that states will follow our lead towards a free, competitive environment for SMR systems . . ." but "defer[s] judgment as to any action by the states relating to regulation of other aspects of SMR operations." *Id.*

[93] *See Florida Lime & Avocado Growers, Inc., et al.* v. *Paul*, 373 U.S. 132, 142, 83 S.Ct. 1210, 10 L.Ed.2d 248 (1963).

Section 221(b) of Title 47, U.S.C., denies Commission jurisdiction except as provided by § 301, over "telephone exchange service" which is subject to state regulation. While it appears to us that SMRS are not likely to be significantly engaged in "telephone exchange service," and further appears highly arguable that the § 301 licensing power includes the power to draw up comprehensive schemes providing the conditions under which licenses will be granted, we do not dispose of this challenge on these grounds. Rather the context of § 221 within the Title dealing with common carriers, and the section's own reference to "telephone companies" and "telephone exchange service," makes clear that its only application is to common carriers. Since we have upheld the Commission's non-common carrier classification of SMRS, § 221(b) has no application here.

Section 152(b) of Title 47, U.S.C., expresses a similar denial of Commission jurisdiction, except as provided by § 301, over radio or wire carriers whose operations are either intrastate, or interstate or foreign only by interconnection with another carrier with whom it has no interlocking control relationship. Reserving the same question set forth above as to the breadth of the § 301 licensing power, and not conceding that SMRS fit within the categories of intrastate and interconnection interstate operations to which the section applies, we again rest our holding on other grounds. Under 47 U.S.C. § 153(h), the term "carrier," as used in § 152(b), is equated with "common carrier." Thus, § 152(b) only has application to common carriers, and our affirmance of the Commission's non-common carrier classification of SMRS vitiates any objection which might rest upon it.

III. *Conclusion*

The 1974 Order, as modified by the 1975 Order, is upheld.

In affirming the allocation of 40 MHz for development of a cellular system, we are not unaware of substantial anti-competitive effects which may become more apparent as the date for general implementation of the systems draws nearer. In light of the Commission's broad discretion in experimentation and encouragement of the broader use of radio, we conclude that those effects are at present too speculative and distant in time to constitute this part of the Order a breach of discretion. We make no comment upon the possible success of any antitrust actions which may in the future be brought, nor upon possible challenges to Commission actions taken when anticompetitive effects, if any, [674] have become more immediate and predictable.

In affirming the 30 MHz allocation and authorization of SMRS, to be treated in the same way as private operators, our holding is subject to future challenge should SMRS in practice behave as common carriers. This part of the Order, save the bare allocation of 30 MHz to the private services, which the Commission itself has stated to be severable,[94] will be open to renewed attack if it is later concluded that SMRS are in fact common carriers.

So ordered.

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[94] 51 F.C.C.2d at 976.

APPENDIX B

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

FCC 74-470 11582

Docket No. 18262

In the Matter of

An Inquiry Relative to the Future Use of the Frequency Band 806-960 MHz; and

Amendment of Parts 2, 18, 21, 73, 74, 89, 91, and 93 of the Rules Relative to Operations in the Land Mobile Service Between 806 and 960 MHz.

Second Report and Order

Adopted: May 1, 1974 Released: May 2, 1974

By the Commission: Commissioners Reid and Hooks concurring in the result;

Commissioner Quello not participating.

1. This rulemaking proceeding deals with the allocation of frequency spectrum in the 806-947 MHz band to the land mobile radio service and to the development of regulations pertaining to the future use of that spectrum. The first phase of the proceeding, initiated on July 17, 1968, with a Notice of Proposed Rule Making and Notice of Inquiry (33 FR 10807) and consummated on May 20, 1970, with a First Report and Order and Second Notice of Inquiry (35 FR 8644), accomplished a general reallocation of spectrum in the 806-947 MHz band with the effect of providing an additional 115 MHz of spectrum to the land mobile radio service. It also provided a tentative sub-allocation of this spectrum within the land mobile service, with

75 MHz being allocated for the development of high capacity common carrier mobile communications systems to be operated by wireline common carriers and 40 MHz for the development of efficient private and shared systems for use by eligibles in the Industrial, Land Transportation and Public Safety Radio Services (Parts 89, 91 and 93 of the Rules). The second and current phase of this proceeding was initiated with the Second Notice of Inquiry, released coincident with the First Report and Order, and deals in greater detail with the questions of spectrum allocations within the land mobile service and the development of systems standards and other regulations applicable to the new 900 MHz land mobile bands.

2. In the Second Notice of Inquiry, the Commission requested interested parties to undertake detailed technical and marketing studies looking toward the future use of the 900 MHz band to meet the public need for land mobile radio services to and beyond the year 1980. Special emphasis was placed on the need for greater spectrum efficiency in designing new systems for this band. In December of 1971, a number of parties submitted written reports describing the results of their developmental efforts. Supplemental filings and comments on the initial reports were received in July of 1972. Many of the technical reports and comments contained new data or raised policy questions which had not been previously addressed in this proceeding. Therefore, to allow interested parties an opportunity to present their views on these matters, the Commission received oral presentations on May 14 and 15, 1973.

3. During the course of the second phase of this proceeding some 58 parties filed written statements and/or were represented in oral arguments to the Commission. The names of these parties are listed in Appendix A. Numerous comments and letters have also been received from members of the public and Congress and have been taken

into consideration. All of the information submitted to the Commission has been thoroughly analyzed and care taken to ensure that all positions and arguments are fully understood. We have now reached the point in this proceeding where we believe it appropriate to decide the major policy questions, to finalize the basic frequency allocation and to adopt specific regulations governing the licensing of 900 MHz land mobile systems. For convenience and clarity we have arranged our discussion of these matters in three sections. The first section deals with frequency allocation and related matters; the remaining sections deal with policies and regulations pertaining to the various systems to be accommodated in the 900 MHz band. Rules being adopted at this time are contained in Appendix B.

4. The main areas of controversy throughout the current phase of this proceeding have centered on questions of spectrum allocations and Commission policies toward the regulation of the various land mobile systems which have been proposed for operation in the 900 MHz band. Before discussing our conclusions regarding those matters, we believe it will be useful to briefly define the land mobile systems which are being considered for this band.

5. The cellular system, as proposed by AT&T and others in this proceeding, is a sophisticated, high capacity land mobile system requiring a large capital investment and a substantial spectrum allocation. The spectrum assigned to such a system would be divided into discrete channels which are assigned in groups to small geographical cells covering a defined service area. The key to the cellular system's high capacity is its ability to shrink the size of those cells while holding the total amount of spectrum used by the system constant. What results is a multiple re-use of channels throughout a given geographical area *and* more traffic intensity per unit of spectrum in advanced stages of development than other land mobile communications system proposed to date. This is achieved, however, with considerable expense and technical com-

plexity. Fortunately, the expense can be shared over a much larger user base than with other systems. To date, two companies, Bell Laboratories and Motorola, have submitted detailed cellular system proposals to the Commission. Although the basic systems concepts are identical, there are some technical differences which affect the amount of spectrum each system would need to operate efficiently. The primary technical difference lies in the bandwidth of the discrete channels. The AT&T proposal calls for channel widths which are 60% wider than those proposed by Motorola. On the surface it might appear that 60% more spectrum would then be needed for the AT&T proposal over that of Motorola. However, complicating the argument over bandwith is the ability to re-use channels at close geographical spacing. According to AT&T, the wider bandwidth allows for more intensive channel re-use, which outweighs any initial spectrum saving due to the narrower channels. There is also a difference in the type of service to be provided on the two proposed systems. The AT&T system would be utilized for fleet dispatch as well as mobile telephone service, whereas Motorola's system is designed for mobile telephone service only. This difference has a significant impact on the amount of spectrum each would need. AT&T's dual purpose system calls for 64 MHz while the initially proposed Motorola telephone-only system would need 19 MHz.

6. The second class of system under consideration is the multi-channel trunked system. This system is similar in concept to so-called community repeaters widely employed in the private dispatch service today except that the users would have access to a number of channels instead of just one. Actual channel access is controlled by a central computer, which gives a user the first available channel or places the user in a waiting line (queue) to be served in turn. This technique provides the user a higher grade of service than is possible in comparably loaded non-trunked

systems by reducing the amount of time he must wait for a channel and/or reducing the probability that his call will be blocked. Small scale trunked land mobile systems are presently being used to a limited degree by common carriers providing mobile telephone services in the 450 MHz band. The innovation lies in its intended application to vehicular fleet dispatching and the potential of using many more channels per system than is now possible. As proposed by both General Electric and Motorola, trunked dispatch systems would be suitable either for large single users, cooperative groups of users on a cost shared basis, or commercial operators providing service for hire. The nature of trunked systems makes them particularly suitable for serving different types of users on the same group of channels without interference. With today's single-channel systems it is generally desirable to put similar types of users on the same channels in order to control interference. That approach, however, requires separate allocations of channels for the various classes of users which often leads to spectrum inefficiencies. In the trunked system, different types of users can be intermixed more readily as they operate essentially independently of each other, the computer assigning channels on demand. Once a user is assigned a channel, it is his exclusively for the duration of his call and no one else on the system can listen or interrupt during normal operation.

7. The final category of system proposed for the 900 MHz band is the basic conventional land mobile system in use today in the lower frequency bands. While these systems may also employ one or more channels, their distinguishing feature is manually controlled channel access as opposed to the computer control used in trunked systems. This makes the conventional system simpler and cheaper, but causes some loss of traffic efficiency resulting in either fewer mobiles per channel or lower service quality. The degree of such inefficiency depends largely upon

the traffic characteristics of the users. Our analysis would indicate that for a significant segment of the land mobile requirement, particularly where short range, short message communications are involved, the conventional system can be as or more efficient than the trunked system. Therefore, considering its lower cost and greater operational simplicity, the conventional system, we feel, has a definite place in the 900 MHz band alongside the more sophisticated systems described above.

Discussion of Allocations

8. In the past, the Commission has treated land mobile spectrum requirements from a service perspective, allocating blocks of spectrum, usually on a nation-wide basis, to each of the twenty or so radio service categories. This method of allocation has led to parochialism among the users and inequitable situations where spectrum shortage and abundance exist side by side in the same cities. In this docket, we are proceeding to meet land mobile spectrum requirements in a somewhat different manner. Rather than allocating according to user categories or services, we have chosen to allocate by system type and to allow the market to determine ultimately how much spectrum is utilized by the various types of users. With this in mind, the allocation problem becomes a matter of defining the systems to be accommodated, determining how much spectrum will be needed to satisfy the demand for such systems over a reasonable period of time, and arranging the separate allocations in an orderly plan, taking into account the technical characteristics of the systems and their electrical compatibility with each other and with systems in neighboring bands.

9. The concept of allocating spectrum for systems rather than services has been accepted or encouraged by many who have participated in this docket. To be sure, some of today's service groups have asked for their own private

allocations of radio spectrum, but the weight of arguments in the proceeding recognizes the drawbacks of such allocations and supports specific allocation proposals along the lines of systems or broad types of service, e.g., dispatch or mobile telephone. A half dozen different allocation plans were proposed in the various filings in this proceeding, each of which has been carefully considered in developing our own plan.

10. Throughout this docket the Commission, industry, and the public have been dealing with innumerable unknowns, ranging from radio propagation phenomena and new system technologies to innovative service offerings and future market projections for these services. While we now believe that we have a better grasp of these factors through our analysis of the information submitted to the Commission and discussions with industry and user groups, there are still a number of technical questions which only further developmental work can answer, and the ultimate demand for the proposed systems can only be determined in the market itself. For these reasons it is important that any allocation plan be flexible enough to cope with new and often unforeseen technological and economic forces. We feel the allocation plan which we are advancing provides us with that flexibility while amply satisfying presently defined needs.

I. *Frequency Allocations to Cellular Land Mobile Communications Systems*

11. Originally in this docket the Commission tentatively allocated 75 MHz for the use of wireless common carriers to develop cellular land mobile and air/ground systems. The size of this allocation was generally supported by the wireline industry and by a number of radio equipment manufacturers. However, it was opposed as being excessive by the radio common carriers, most radio equipment manufacturers, independent equipment sales outlets, private

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user organizations, and a large number of private users themselves. The Department of Justice and Office of Telecommunications Policy also deemed this allocation to be excessive.

12. At the time the allocation was made, in 1970, there was very little evidence to indicate if 75 MHz of spectrum was too much or too little for the intended purpose. Little was known about cellular technology and even less about the potential market for such a system. Based on our current understanding of these factors, we have concluded that the 64 MHz which AT&T proposed for a domestic public cellular land mobile system is somewhat excessive.[1] According to most market projections, 64 MHz of spectrum would handle the foreseeable demand for mobile telephone and a substantial portion of the dispatch market to the end of this century in our biggest cities. In the medium to small urban areas, those of two million and under, such an allocation would give the operator enough capacity to handle the total land mobile demand, dispatch and telephone, far beyond the time frame contemplated in this proceeding. Consequently, we are reducing the size of the allocation for cellular systems to 40 MHz. In addition, we will not assign the full 40 MHz to any single operator all at once. Rather, in each area the system operator will be given the minimum amount of spectrum required for that area initially. Additional spectrum will be made available upon a showing of need. This plan is similar to AT&T's as outlined for Philadelphia in its December 1970 technical filing. In AT&T's plan a start-up system could be established by utilizing only 12.5 MHz. As the system grew it would utilize additional spectrum until the allocation was exhausted. After that, further expansion would require cell division. Our plan, therefore, differs from AT&T's in the size of the total allocation and in the fact that the

[1] AT&T proposed to use the remaining 11 MHz for public air-ground service.

Commission will retain control over the unused portion of the allocation until actually needed in each system. We note that our approach is similar in effect to the recommendation of the Office of Telecommunications Policy which called for an initial allocation of 14 MHz for cellular systems with additional reserve to be allocated as required.

13. A 40 MHz cellular system utilizing 40 KHz channeling should have an ultimate capacity to handle about 105,000 telephone subscribers and 105,000 dispatch users (see AT&T December 1970 filing, page 40). This is sufficient capacity to handle the predicted market for mobile telephone to the year 1990 in the largest cities, plus one quarter or more of the dispatch market in those areas. There is, however, considerable uncertainty involved in predicting the mobile telephone market. This uncertainty results primarily from the possibility of the service developing into a consumer item. For this reason, we have also strategically placed spectrum reserves totalling 20 MHz in proximity to the cellular allocation which could be used in the event of unexpected growth. We must stress, however, that the marketing studies submitted to the Commission do not indicate that such would be the case, at least in the foreseeable future. Moreover, should a consumer market develop, it would most probably require spectrum in excess of the total available in the 900 MHz range. Therefore, we cannot realistically plan for that kind of growth in this proceeding but would have to look to other regions of the spectrum to obtain the necessary capacity.

14. AT&T has argued that an allocation of less than 64 MHz for a cellular system would result in an increase in the cost of the service. The Commission has studied this point carefully, but we do not feel that the cost penalty of reduction from 64 to 40 MHz would be significant. Using AT&T's own data, the proposed reduction in available spectrum for the cellular system will raise the shared facility cost per mobile unit by about 20%. In as much as the

shared facilities' cost represents only about one-half to one-third of the total cost to the user, the 20% cost penalty is reduced to less than 10% in his overall bill. Moreover, the capacity and ultimate cost of mobile telephone service in a cellular system is highly dependent on technology. For instance, a reduction in channel spacing, which some have argued is feasible, could increase the total system capacity and affect ultimate costs. The application of mass production techniques and competition in the production of mobile units for the cellular system could drive prices down below that which is presently foreseen. Despite these uncertainties over the future market for mobile telephone service, we believe the 40 MHz proposed for a cellular system is sufficient and will provide for adequate growth and reasonable costs over the foreseeable future.

II. *Frequency Allocations to Air/Ground Communications Systems*

15. At this time we are making no allocation for a public air/ground system. AT&T had proposed that 11 MHz be used for such a system although it made no factual showing in this docket to substantiate any appreciable public demand for the service which cannot be met through the use of channels presently allocated for that purpose. Furthermore, ARINC, in its July 1972 comments, noted the Air Traffic Conference of 1963 adopted a resolution which, in effect, prevents the use of public air/ground systems in scheduled service. Therefore, the spectrum which might have been allocated for air/ground service is being incorporated into the several reserve bands mentioned earlier. Should it be warranted, a separate proceeding may be instituted in the future to consider the overall question of public air/ground communications spectrum requirements. Also, the proposals of ARINC for additional spectrum for general aviation use in this band are being denied on the grounds that such proposals were considered on their

merits and denied in the First Report and Order herein (paragraphs 21 through 23). No new information has been submitted by ARINC which would alter that decision. Furthermore, this band is not well suited for aeronautical services which generally require a high degree of international standardization. The use of these frequencies for mobile services in the United States will be in derogation of ITU Region II allocations and coordination of aeronautical service with neighboring countries would be difficult, if not impossible.

III. *Frequency Allocations to Conventional and Trunked Land Mobile Communications Systems*

16. The next allocation which we will discuss is for conventional and trunked systems. For the most part, we expect those systems to be used for fleet dispatch operations of the kind now accommodated under the so-called private land mobile services. In the 1970 Report and Order, the Commission tentatively allocated 40 MHz of the 900 MHz spectrum for private land mobile services. The size of this allocation has not been seriously disputed in this proceeding, although some parties, notably equipment manufacturers and user groups, urged that the private allocation be larger. These same parties later supported the OTP recommendation of 40 MHz to be allocated for "any mobile service to be offered on a non-rate regulated competitive basis".

17. At this time we are making available an allocation of 30 MHz of spectrum for conventional and trunked systems with additional reserve bands so placed as to be readily accessible for future growth if needed. Based on market projections given by industry, 30 MHz should be sufficient in most areas well into the 1980s, and the reserve bands will take care of any unforeseen growth within and beyond that time frame. As will be discussed further in a later section, it is our intent that the allocation for conven-

tional and trunked systems be available for both private and commercial (third party) operation and used for either mobile telephone or fleet dispatch service. These provisions are discussed in more detail in the section below dealing with the regulation of these systems.

IV. *Frequency Provisions for Industrial Scientific and Medical (ISM) Devices*

18. Throughout this proceeding the General Electric Company has urged us to reconsider our plan to reduce the size of the ISM (industrial, scientific and medical) spectrum provision from 50 MHz to 26 MHz. General Electric claims that such a reduction will make it impossible to continue manufacturing economical microwave ovens for this band. It argues that a minimum of 38 MHz is needed to make an oven which is competitively priced and capable of cooking all types of foods properly. Although there appears to be some merit to GE's arguments, we are not inclined to give up our ultimate goal of reducing the ISM emission limits to 26 MHz. To reopen all or a large part of the original ISM provision would cause a serious reduction in the amount of spectrum available for land mobile communications services in this range. On the other hand, it is likely to be 10 to 15 years before the full land mobile allocation will be required and thus some interim provision can be made for continued use of wide-band ISM ovens during this period. This should provide necessary time for the production of ovens capable of utilizing the narrow emission, without crippling the industry by forcing it into tighter standards which are not now feasible. Our decision, therefore, is to establish a guard band 12 MHz wide immediately above the regular ISM provision so that the total spectrum available for microwave ovens would be 38 MHz. However, this guard band would carry a time limitation of 5 years, after which the band would revert exclusively to land mobile use. This will provide an opportunity for the oven industry to continue de-

velopment of more spectrally efficient devices which can meet the narrower bandwidth. In the meantime, the temporary 12 MHz ISM guard band could be considered for sharing by land mobile or related services which can tolerate oven interference and which do not require a paired allocation.

V. *Land Mobile Reserve Allocations*

19. Most parties who filed allocation proposals in this docket recommended the establishment of reserve bands to accommodate new land mobile services or unexpected growth in existing services. We feel that this concept is an excellent one and a generous amount of reserve spectrum has been incorporated into our allocation plan. Our plan calls for 8 reserve bands with a total of 45 MHz. The bands are so positioned as to allow the greatest flexibility in expanding the proposed services and for accommodating new services. The reserve bands also provide buffers between high and low power land mobile stations and provide some degree of flexibility in coping with special problems along the Canadian and Mexican borders. These reserve bands are not being allocated to any specific use at this time, but are merely designated as land mobile reserve. Their allocation in the future will be the subject of separate rule making as the need arises.

VI. *Treaty Considerations*

20. Under present international treaty obligations land mobile operations in the 900 MHz band will be in derogation of the ITU allocation table for Region II. Such derogations are permitted under No. 115 of the International Radio Regulations, provided we afford protection to assignments operating in accordance with the ITU allocation table and accept any interference from such operations. The obligation to protect both Canadian and Mexican television assignments between 806 and 890 MHz will mean

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that the assignment of some types of land mobile operations, primarily high powered and/or omni-directional stations, will be impaired close to the border areas. This is especially true in Detroit and Buffalo, where even low powered mobile units might cause interference in certain nearby Canadian UHF-TV coverage areas. In exceptional cases such as these, the national allocation table we have outlined might be modified to provide land mobile spectrum relief in the reserve sections above 890 MHz. The need for such adjustment would be the subject of future rule making if necessary. In order to meet international commitments, we intend to examine all applications for land mobile stations within possible interference range of each border to ensure that harmful interference to Canadian or Mexican assignments will not result. This procedure will apply to land mobile operations within the entire band 806 to 947 MHz. More specific coordination procedures may be adopted at a later date as a result of our continuing discussions with the respective administrations.

Policies Relating to Cellular Communications Systems

I. *Ownership of Cellular Systems*

21. The parties filing comments have generally not questioned allowing wireline carriers to operate cellular systems. There has been a general feeling of malaise about letting wireline monopolies expand in the mobile communications market which has been traditionally served primarily by competitive entities. However, the wireline carriers are the only organizations which have demonstrated that they possess the resources and the expertise necessary to establish cellular systems which would have nationwide compatibility. AT&T was the only entity which submitted a comprehensive proposal for developing and implementing compatible cellular systems. Therefore, we have concluded that wireline carriers should be permitted to operate cellular systems. Moreover, since a cellular system

is technically complex, expensive, and requires a large amount of spectrum to make it economically viable, competing cellular systems would not be feasible in the same areas. Also, as these systems will require extensive interconnection with the wireline telephone system, and nationwide compatibility is desirable, we have concluded that only wireline carriers should be licensed to operate them.

II. *Restrictions on Wireline Telephone Companies*

22. A major concern voiced to the Commission by various parties to this proceeding deals with potential anticompetitive action on the part of wireline telephone companies through the use of cross-subsidies. It is feared that the guaranteed revenues generated by the telephone companies in their wireline operations will be used to give them an advantage in the sale of mobile dispatch services on the cellular system.

23. The Commission is fully aware of the danger of unchecked cross-subsidization in a competitive communication market and we fully intend to take appropriate steps to ensure that this practice does not take place. Therefore, as a minimum we shall require that any wireline telephone company establish a wholly separate operating company with separate books of account, separate officers and separate personnel in order to operate a cellular land mobile system as well as any other separation requirements we may deem necessary to prevent cross-subsidization. We shall establish detailed regulations and procedures for the separation of subsidiary and parent organizations at a later date.

24. While we think that establishment of separate operating companies with separate books of account, separate officers and separate operating personnel will go far to prevent the cross-subsidization feared by many parties, we will also impose certain other restrictions on the wireline

companies. They, for the most part, have already been accepted by the Bell System and the independent telephone companies. Thus, the wireline companies will not be permitted, directly or indirectly, to manufacturer, provide or maintain mobile equipment. In addition, the base station components must be manufactured by companies wholly independent of the wireline carriers.[2] All contracts between any telephone company and its mobile telephone affiliate or subsidiary shall be filed with the Commission and records of all money flows and exchanges or flows of property (of whatever kind) between them shall be maintained and reported periodically in accordance with rules specified by the Commission. Moreover, any telephone company will be required to offer interconnection services to the public on the same basis as it does to its mobile telephone affiliate or subsidiary. We should like to think that these measures are sufficient to provide regulatory control of the cross-subsidization problem.

25. A number of the parties filing comments expressed a concern that permitting the wireline carriers to offer dispatch services through their cellular systems could, because of their ability to cross-subsidize, result in anti-competitive practices and eventual market dominance by the wireline companies. On the other hand, dispatch or dispatch related service makes up a substantial part of the initial market for cellular systems proposed by the wireline carriers. To exclude dispatch-type services entirely could delay or even prevent the implementation of any cellular systems. Also, if cellular systems can, through natural economies, provide lower-priced dispatch services, the public should not be denied that benefit. We have therefore concluded that the operators of cellular systems should be allowed to provide

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[2] Wireline carriers will be allowed to manufacture and maintain radio equipment for use in initial development cellular systems. However, this equipment may not be used when the system becomes operational or in developmental systems offering service to the public.

some dispatch services. With regard to the cross-subsidization issue, we feel that the restrictive measures described above will greatly minimize the ability of wireline carriers to cross-subsidize. However, we think it desirable to place some restriction on "fleet type" automatic dispatch offerings by operators whereby a dispatcher can call several vehicles simultaneously. In this regard, there is technical evidence that the widespread use of "fleet call" in a cellular system would substantially reduce its efficiency, thus eliminating an important reason for having a cellular system at all. Therefore, we will not allow cellular systems to offer dispatcher-originated communications service with "fleet call" capability whereby a single dispatcher can automatically call several vehicles simultaneously.

III. *Developmental Authorization of Cellular Systems*

26. Initially, we will authorize only developmental systems until we are reasonably sure that all factors necessary for regular implementation are accomplished. Developmental systems will be authorized on a one-to-a-market basis and only one system per telephone company. For system planning purposes the entire 40 MHz of spectrum may be considered as being available although the Commission may limit initial assignments of spectrum to less than 40 MHz. Therefore, any proposal for an initial developmental authorization must include a request for the minimum amount of spectrum required for the area proposed to be served. Additional spectrum, beyond that specified in initial developmental authorizations, will be made available upon a demonstrated showing of need and in accordance with criteria to be set forth in a subsequent rule making proceeding to amend Part 21 of the Rules to provide for the regular licensing of cellular systems. That proceeding will also provide technical standards, loading criteria, etc. It will be instituted when more detailed technical information becomes available through the developmental systems.

27. The guidelines under which developmental cellular systems will be authorized are contained in Appendix C.

The Assignment Plan for Private, Shared, and Common User Communication Systems in the 900-MHz Band

Preliminary Comments

28. In the past we have made separate allocations and provided different regulatory schemes for private systems of communication and for radio facilities used to provide service to the public. The former were authorized in the Safety and Special Radio Services and the latter in the Common Carrier Services. Nevertheless, over the years, especially during the course of the decade just passed, hybrid arrangements for radio communication facilities have evolved in the private services, particularly under our cooperative use and multiple licensing practices.

29. We have examined what we plan to do, here, in the light of the history of the foregoing regulatory framework and of the development of the land mobile services, and we have decided to modify, considerably, the traditional scheme of regulation we have followed in the past. Thus, while we still believe, as we have made clear in prior portions of this Report and Order, that common carrier-type regulation is appropriate for the large cellular land mobile radio systems (which, because of their design, can most effectively be operated by a single entity), we have determined that such manner of administrative control is neither appropriate or desirable for the variegated systems of communication we plan to authorize in the 806-821 MHz and 851-866 MHz bands.

30. In this connection we would point out that while some systems of land mobile radio communication have been authorized as common carriers, the vast majority of those employing radio are licensed in the private services. These private systems serve vital needs and requirements

of governmental, industrial, and land transportation entities, but, unlike facilities licensed in the Domestic Public Radio Services, they operate under restrictions and limitations as to the persons who may employ them; as to the purposes for which they may be used; and as to the kind of messages that may be transmitted. The scheme of regulation we adopt here parallels that used in the private services. Accordingly, while our action departs from the traditional approach to administrative control over public and private systems of radio communication, it does follow closely assignment policies and practices used in the private services. Thus, in major respects, our plan is not entirely new or untried; rather, it arises out of and amplifies and builds on what we have found to be an effective and efficient method of management of the radio spectrum.[3]

31. To explain, our new plan is designed to permit the establishment of a large variety of systems of radio communication to meet the many and varied requirements of different users. The assignment plan is flexible. It will allow police eligibles (and other classes of users, as well) to establish their own radio facilities and to manage them in ways they think best meet their individual requirements. Also, they may share facilities with other classes of users on a cooperative basis; or form nonprofit corporations or associations to serve as licensee and to manage their systems for them. In this way they will be able to spread the costs over a broader base and reduce capital and operating expenses proportionally. Finally, under certain conditions,

[3] The Commission has long treated private and land mobile communication systems under a specialized regulatory scheme. Basically, we have expanded that plan, here, to cover a wider range of alternatives for establishing or obtaining communication services. In accomplishing this objective, we have abandoned, to a large degree, the service categories employed in the past, and we have also combined private, shared, and common user systems under a single assignment and regulatory plan which we believe to be more efficient than that used in the past.

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we would license a person to provide service, on a commercial basis, to a single customer, say a large, metropolitan police department. That is one possibility. Another would be to license a common user system to provide service to a number of small police forces, which may be operating in adjacent jurisdictions, under some arrangement which would afford all the means of communication they require at low cost and in an efficient manner. And, of course, many other variations of such arrangements will be possible. Our plan provides for this.

32. In addition, eligibles will have the choice of trunked or conventional systems. Further, within each of those modes of operation, they will have a variety of ways in which to use radio, and this will permit them to tailor, to a fine degree, the communication systems they elect to establish. Added to this, overlaying all of these alternatives, they will have an option to switch from one type of system to another, and then back again, should any prove to be unsatisfactory or not to work out as expected.

33. A plan of this kind is feasible, for we now have sufficient spectrum space to offer a large number of options to the land mobile community. Thus, in any one area, and in adjacent areas, too, we have the potential for 600 single-channel conventional systems; or 30, 20-channel, or 60, 10-channel, or 120, 5-channel trunked systems. There are other combinations, too. Therefore, overall, with the spectrum we are making available for immediate use and with what we are holding in reserve, we are assured, perhaps more so than ever before, that we will be able to accommodate the needs and requirements of land mobile operations, in a most effective and efficient manner (with little or no congestion), for many years to come.

34. We are fully aware (the parties have not failed to remind us of this) that some of the entities we propose to

license, i.e., entrepreneur-operated, common-user systems, could be licensed as common carriers and regulated under Title II of the Communications Act. However, our basic goal in this proceeding is, as it has been since its inception, to make available to the land mobile service additional spectrum and to do this in a way that would promote the larger and more effective use of this spectrum in the public interest, all in conformity with our duties, obligations, and responsibilities under Title III of the Act. Moreover, the type of radio operations planned, here, for the land mobile services at 900 MHz, were not envisioned by the original drafters of the Communications Act. In this instance, the radio services we are establishing fall somewhere between what Congress had in mind in framing the provisions of Title II and what it intended to cover under Title III of the Act. In these circumstances, then, we feel we have the discretion necessary to select the regulatory tools we believe will most effectively promote the public interest.

35. In accomplishing this goal, we are free, we believe, to adopt whatever comprehensive regulatory scheme is best suited for the purpose. In this instance, on the basis of the extensive record in this rule making, and also in light of our experience, particularly that over the past two decades, we find that our plan for the use of the 900 MHz spectrum would not be best implemented by restricting the number of licensees. We are of the view, rather, that reliance should be placed on the competitive forces present in the communications market to give land mobile users the options and choices we feel should be theirs. In this connection, then, we have concluded that we do have the necessary statutory authority to choose one regulatory process which is preferable, on demonstrable grounds, over another which is not at all suited to the objectives of the action we propose to take. This, we think, is the central holding in *United States* v. *Southwestern Cable Co., et al.*, 392 U.S. 157 (1968); and *Philadelphia Television Broad-*

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casting Co. v. *Federal Communications Commission,* 123 U.S. App. D. C. 298, 359 F.2d 282 (1966).

36. In this connection, we have, of course, addressed ourselves to the argument advanced by a number of the parties that the Communications Act, together with certain precedents cited in support of the proposition, compel the conclusion that we do not have discretion in this matter to select one regulatory scheme over another; that we must treat any entity offering commercial service to eligibles or licensees in the private services or to the public as a common carrier and regulate that entity as a common carrier. But we do not think we are restricted or limited in this way in carrying out our duties and responsibilities under the Act of assuring the most effective and efficient use of the radio spectrum under whatever controlling circumstances exist. We believe, rather, that the Communications Act, read as a whole, directs us to regulate the use of the radio frequencies that are available in the way that affords maximum benefits to the public, and that is what we have done, here.[4]

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[4] It is pointed out that such a licensing practice would be at variance with that presently used in authorizing service in the Domestic Public Radio Services, under Part 21 of our rules. This is so. But where we find it necessary, in achieving a desirable goal, to abandon a trail once followed, and to turn to a new one, we must have the right to do so. There must be progress, and we must be able to learn through experience what is good and what is not, and to act upon that experience. For this reason and others set out, above, in our opinion, we deny the "Motion for Severance of the Issue of Multiple-User Licensees from the Frequency Allocation Aspects of this Proceeding and for Resolution of that Issue in an Evidentiary Hearing," filed herein on October 19, 1973, by the National Association of Radiotelephone Systems (NARS). The issue NARS points to has been debated at length. Parties, including NARS, have addressed themselves to it in their comments and pleadings and in oral argument, too, and we see no need for further proceedings to decide this legal question. Accordingly, as stated, the referenced motion is denied.

37. In this connection, we would point out that we have allocated 30 MHz of spectrum space, or an equivalent of 600 25 kHz voice-grade channels, for the future development of mostly dispatch-type land mobile radio communications systems. Further, this is a new range of spectrum for land mobile use, much higher than that used in these services in the past. Thus, as we have mentioned, new system design; new equipment; and new marketing practices are to be worked out as the frequencies are placed in use. In these circumstances, we cannot predict with any degree of certainty what types of communication systems will emerge or what methods of marketing will make them most available to the land mobile communication users. However, our experience over the past 25 years teaches us that detailed subdivision of the spectrum, with attendant restrictions, does not always promote the fullest and most efficient utilization of radio frequencies. Accordingly, we have grouped varying classes of users and varying methods of use together and we have allocated for their use the entire band of 30 MHz. We did this specifically and intentionally, for we wanted the competitive forces in the market place and the relative needs of each user or group of users to decide what assignments are made first and to whom such assignments are made. In this way the three basic types of eligibles are placed on equal footing, i.e., private, shared, and common user systems have commensurate or corresponding opportunities to apply for and to establish systems of radio communication required to carry out authorized functions and activities. No person is excluded and no person can exclude, by recourse to challenges on economic or other grounds inconsistent with this plan, so there will be open entry to the market and competition among users, but all this on a fair basis as we have just described.

38. With this spectrum, with the combinations mentioned, we believe that the competitive forces of the mar-

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ket place can be relied upon to provide the foundation upon which we may properly rest our regulatory approach. To illustrate, as to the cost and quality of service, or as to the form it takes, there is no need for regulatory measures like those imposed on common carrier operations, for each user will be free to negotiate with multiple suppliers and communication companies for the facilities he needs. Also, in certain circumstances, he may apply for and construct his own system, should he find that mode of operation to his advantage. Or he may join with others to bring together the necessary elements of a radio system under our "cooperative use" practices; or form a nonprofit association or corporation for the purpose; or rely on a trade organization, which may offer communication services to its members on a nonprofit, cost-shared basis. All of these avenues are open to the user; and with them we feel he is protected from those abuses that might arise, were the circumstances other than what they are.

39. Additionally, we think it very important that we exercise our authority and adopt a regulatory plan which is greatly simplified. We want the burden on the applicant to be significantly less. We would like to cut down on the costs to the public, particularly in the case of those seeking to bring service to it through common user systems. Also, we find it imperative to adopt procedures which will enable us to authorize eligible persons to establish the radio stations applied for at a much earlier date than is possible under current processes that now apply to radio common carriers.[5] We believe this can be best accomplished by

[5] We would note that, over the years, where procedures have been followed that provided for consideration of economic impact on common carriers, we have witnessed what seems to us are interminable delays in the authorization of service, in some cases extending up to 4 or 5 years and at times longer. Many of these delays, in our view, had or have little or nothing to do with the ultimate merits of any given proposal; rather, they are primarily the result of efforts on the part of existing carriers to keep out competition.

adopting our plan—a plan we have modeled and fashioned on our practices and procedures in the private services, where a higher level of administrative efficiency does obtain.

40. On that point, we think it clear that no one user will necessarily have to look to a single business entity for service. This is as it should be, at least in the context of the fundamental objectives we have set for ourselves in the formulation of our 900 MHz assignment plan. Those objectives, we will mention again, are to provide a maximum number of ways under which a maximum number of qualified persons may, at the earliest date possible, with the least administrative delay and under minimum procedural restraints, provide themselves with the means of radio communication they may require to enable them to conduct their affairs in an efficient and effective manner.

41. Furthermore, there are great advantages to the public in having at 900 MHz a multiplicity of sources for the kinds of equipment and related facilities needed to meet the requirements of land mobile users. Companies of this kind—providing such services and facilities—can and do function independently, competing with one another for business, all without any adverse impact on the public. This being so, our plan is premised in part on the nature of the requirements of land mobile users; and we think it clear that "limited competition" or "natural monopoly" approaches, where detailed and complex regulatory procedures are imposed, would be antithetical to the best interests of these users and to the public, too.

These efforts have been effective in delaying, if not limiting competition; and, in some cases, they have frustrated the actions of persons interested in establishing what might very well have been a valuable service to the public, all with few, if any, corresponding benefits in terms of the overall public interest, convenience, and necessity.

42. Further, we are convinced that we, for our part, must not carry forward to the 900 MHz band the burdens and delays inherent in present procedures, used in regulating common carriers, except, of course, with regard to cellular service to be provided by wire line telephone companies. It is our view that it is very much in the public interest to shed this heavy cloak and exchange it for one with far greater flexibility and far greater promise for maximizing the potential of utilization of the radio spectrum at 900 MHz.[6]

43. Finally, we emphasize that our new assignment plan and the scheme of regulation we have devised to implement it are designed to be carried out on a national basis. All of the 600 radio channels are made available nationwide. The frequency assignment methodology and technical standards and our operational rules are to apply nationwide, where each frequency assignment will control where the next may be made—this without regard to state boundaries or varying local jurisdictions. In these circumstances, the methods which potential users may employ to make use of radio frequency must also be compatible on a nation-wide basis. If they are not, we will not be able to achieve the goals we have set for ourselves—goals which we feel certain will bring to the public what we foresee to be means for efficient, effective, and low cost communications.

44. We recognize that some state and local authorities, in exercising jurisdiction over intrastate common carrier

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[6] In this regard, our 900 MHz plan will require a minimum of time for adjustments to service parameters, because we have, in our technical and loading standards, built-in allowances to permit expansion of service as it is required, all without major study or evaluation on our part. That is one of the features of the new plan, i.e., it has been conceived in a way which will permit us to eliminate the costly, time consuming, case-by-case treatment of every change or variation in the method of operation or in the charges or types of service provided by the licensee.

communications, may attempt to impose regulations and controls over some or all types of common user systems which would be inconsistent with our allocation scheme for 900 MHz. In this regard we are particularly concerned about regulation which may take the form of limiting or excluding potential users or classes of users from utilizing this band.[7] Such action would be in direct conflict with our attempt in this proceeding to establish a nation-wide system of radio communications consistent with our obligation under Title III of the Communications Act. Both Sections 2(b) and 221(b) of the Act, which reserve to the states jurisdiction to regulate intrastate common carrier communications, begin with language that makes it clear that state action must yield to the sole jurisdiction and power of the Commission to provide for allocation of the radio spectrum and to issue radio licenses. We think both these sections make it clear that Congress did not intend that such regulatory powers the state may be given with respect to intrastate communications be used to inhibit or thwart the Commission in exercise of its obligations in establishing a uniform national plan for use of radio frequencies. We stated in *Telerent Leasing Corp.*, 45 FCC 2d 204, 220, 223: "State action must yield to the sole jurisdiction and powers of the Commission to license radio facilities in the public interest" and that "no state regulation can oust this Commission from its clear jurisdiction."[8]

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[7] In addition to generally frustrating the objectives of this proceeding, any state restriction limiting the number of users would have a negative impact on frequency allocation. Rather than attempting to determine by administrative process the best use of the radio spectrum, our new plan at 900 MHz harnesses the competitive forces of the market place as a regulatory tool to insure efficient and effective frequency use. If those that are first licensed do not effectively utilize frequencies or provide for public need, opportunity will encourage others to seek radio facilities which, under free competition (and the rules we have designed), will supplant the less effective radio users.

[8] Under appeal, U.S. Court of Appeals for the Fourth Circuit.

Moreover, the Supreme Court has held that federal exclusion of state law is inescapable where compliance with both federal and state regulation is impossible. *Florida Lime & Avocado Growers, Inc.* v. *Paul*, 373 U.S. 132, 142-143 (1963). Accordingly, we assert Federal primacy in this area and declare that any state regulatory action that may be taken with regard to users or potential users of the 900 MHz band that is inconsistent with the rules and policy promulgated in this proceeding is unlawful. While we are reluctant to take such preemptive action, we believe it imperative to the success of this program.

Licensing 900-MHz Stations

Eligibility

45. Under our assignment plan, there will be three basic license classifications. Facilities will be authorized either as private, or shared, or common user stations. Under the first heading, private systems, we will license any person or entity eligible in any of the radio services included under Parts 89, 91, and 93 of the rules.

46. In the second license classification, we include, as eligibles, any person or entity offering to provide communication services and facilities, on a not-for-profit, cost-shared basis, to persons eligible under either Part 89, 91, or 93 of the rules. Thus, the licensee may be an individual licensee; a non-profit corporation or association, formed for the purpose of providing radio facilities to qualified participants; or it may be an entity such as a medical society or industry organization which has as its primary purpose some function other than the provision of communication services for their members.

47. Under the third and last license category, we have grouped commercial common user systems. These include any commercial concern offering to provide service to persons eligible under either Part 89, 91, or 93 of the

rules, on the one hand, and on the other, to the public, in general, without regard to the eligibility factor. As we will point out, later, arrangements of the first type will be regulated differently from those of the other type; but in neither case will the licensee be subject to regulation as a common carrier.

48. Reviewing, then, there are to be three license categories, that is, one for private systems; another for shared systems; and the third for commercial common user facilities. Private systems, we envisage, will not be unlike those authorized under our present rules. Shared systems are to be operated on a not-for-profit, cost-shared basis, and they are to be available only to persons eligible in the private services. But the third license category is a new one, for under it commercial concerns will be able to provide communication services for profit, either to eligibles, under Parts 89, 91, and 93, or, alternatively, to the public, in general.[9]

Policy on Interconnection

49. Our new rules also place restrictions on interconnection. In this regard, our policy will be to permit full interconnection only in those cases in which the licensee provides radiotelephone services, on a commercial basis, to the public. Thus, where the licensee serves himself (a private system), or where he provides service to eligibles on a not-for-profit, cost-shared basis (a shared system), or where service is offered to a restricted class of eligible users, but on a commercial basis (one of the two forms of common user systems), interconnection with the wire line facilities of the telephone company serving the area will

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[9] While, as we have indicated, we will not treat these commercial ventures as common carriers, this does not mean that they will not be regulated. They will be, but in a way which will promote, in our view, the fuller and more effective use of the new spectrum in the public interest.

be limited to those situations in which it is accomplished manually, by a person in the employ of the licensee or user, at the licensee's or user's principal place of business. Interconnection at a control point common to more than one licensee or user will not be allowed.[10]

50. Our policy on interconnection is being adopted because our continuing experience with it, in the private services, has convinced us that the mode of operation is basically incompatible with dispatch-type requirements. Thus, where interconnection is used, message time invariably increases, and, further, it brings into play a number of factors which decreases system efficiency. These factors include dial-up time requirements; use of "hold" features of telephone facilities; and a tendency not to monitor the channel before transmission, even in those cases in which the equipment employed is designed to permit it. Accordingly, while we know that interconnection is desirable in certain situations and necessary in others, we make limited provision for it, as previously explained.

Other Restrictions on Operation and Use of 900-MHz Systems

51. We have said that we plan to license 900-MHz stations under three basic categories, namely, as private systems, where licensees use their stations in carrying out authorized activities and functions; next, as shared systems, where service and facilities are provided to eligible persons on a not-for-profit, cost-shared basis; or, finally, as common user systems, where commercial firms offer facilities and services either to eligibles in the private services or to the public.

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[10] This practice is now being followed in connection with shared community repeaters authorized in the Business Radio Service in the 450-470 MHz band. It has worked well, and we have received no complaints from licensees that the restriction interferes in any meaningful way with their traditional dispatch-type operations.

52. Now, in every instance in which service is to be provided solely to eligibles in the private services (in three of the four use categories just mentioned), there are to be three additional license restrictions. First, radio facilities so authorized may only be used for purposes expressly allowed in radio services included under Parts 89, 91, and 93 of the rules. Second, each licensee or user must be shown to be eligible for facilities, either under this subpart or in the radio services, listed, above. Third, all messages and transmissions must be limited to those permitted in the services in which the participants are eligible.

53. These license restrictions are in contrast to those governing stations employed to provide radiotelephone services to the public. In the latter system, interconnection is to be allowed. There are to be no restrictions on the class of persons served, and messages of all types may be transmitted. In brief, common user systems of this type are to have the maximum degree of flexibility in the way, and by whom, they are employed; whereas, private, shared and common user facilities, used to serve specific classes of eligibles, are to be restricted and designed in a way that will permit qualified persons to conduct certain activities and functions in an efficient manner.[11]

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[11] This point may be illustrated by the use made of radio systems by public utilities, eligibles in the Power and Petroleum Radio Services. There, radio is used as a "tool", so that these enterprises may provide utility service on a more effective and efficient basis. And in the Fire and Police Radio Services, where, again, radio is used as a "tool," not in the conduct of the personal affairs of policemen and firemen, but to allow officials to carry out their governmental functions in a more effective and efficient manner. That is the essence of the private services, and we preserve it in the 900-MHz licensing processes through the limitations and restrictions placed on systems operated for, or by, groups eligible in these services.

Filing and Processing of Applications for 900 MHz Facilities

54. Applications for stations are to be submitted to the Commission at its offices in Washington, D.C.[12] All applicants are to use FCC Form 400, along with the additional information which must be submitted in connection with 900-MHz facilities.[13]

55. Our plan is to process these applications essentially in the order in which they are received. Once received, the proposal will be reviewed to determine whether it is acceptable for filing, i.e., not deficient in any material respect. If it is acceptable, it will be assigned a "priority", based primarily on the date and time it was filed. It will then be placed on our "processing line" for consideration "in turn". Where possible, the application will be granted. Should this not be possible, the proposal will be dismissed or denied, depending on the circumstances, and returned to the applicant, and, in this event, he will lose his assigned "priority".

56. These procedures will be followed until all of the channels available in the area are assigned. At that time, all applications on file, proposing operation in the area in

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[12] Applicants proposing operation within the Chicago Spectrum Management Region as defined in the First R&O Docket No. 19150, adopted Oct. 28, 1971, 36 FR 2167 shall file their application on Form 425 with the Chicago Regional Office. A subsequent order will be issued delegating authority to the Chicago Regional Office for the processing of such applications. Rules adopted herein will apply in the Chicago Region pending possible future rule making dealing specifically with 900 MHz land mobile operation in that Region.

[13] While we have not established a schedule of fees for filing or grant of applications for 900 MHz facilities, we plan to do so following the issuance of our report and order in this proceeding. Meanwhile, we will accept applications for filing, subject, however, to the payment of the required fees at such time as they are established.

question, will be placed in "pending status", if the applicant has made this election. Following this, each application in "pending status" will be considered "in turn" at such time as additional frequencies become available.[14] Where the applicant has not made this election (that his proposal be retained in "pending status"), it will be returned to him. He may, then, either file it at a later date or submit it, in modified form, for consideration for grant in some other area or region.[15]

57. We should emphasize, here, that applications for stations in the 900-MHz band will be processed and considered within the framework of specific standards, those set out in our rules. If the proposal meets these specifications, it will be granted. If it does not, it will either be dismissed, or denied, or kept in pending status, whichever action the facts of the case demand. In general, then, there are to be no hearings on comparative or economic issues, as such; and petitions to deny, in general, will not be entertained nor will other procedural or administrative remedies be available, except where the law so prescribes.[16]

58. These practices have been worked out, with care, to enable us to attain our primary objectives, i.e., to provide

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[14] We should add, "together with those submitted at a later date, seeking facilities in the same area." We do not intend to preclude the filing of applications even where the frequencies allocated for use in a given region have been exhausted.

[15] This may be an alternative course of action an applicant may wish to follow, because we will not permit anyone to file multiple applications for radio facilities where such proposals are situated so that if one application is granted, some other one, filed by the same applicant in an adjacent area, would have to be denied or dismissed.

[16] These procedures parallel those employed by us in licensing radio facilities in the private services. There, we have found they work well, enabling us to license facilities with the minimum delay, for the benefit not only of the licensee but, ultimately, for the public, as well.

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the maximum number of channels for communication to the maximum number of qualified users at the earliest possible date, all with a minimum of regulatory "red tape", but with options as to how, and from whom, service may be obtained.

59. Achievement of these goals is possible, we think, for we have sufficient spectrum space, with additional channels in reserve, to permit the establishment of multiple facilities in any one area or region and to duplicate them in adjacent cities and communities. With this, and with the licensing alternatives provided for, there will be no need for comparative consideration of proposals. Besides, such hearings would preclude implementation of our scheme of regulation, since it rests, in an essential way, on there being free and open competition in each area between persons offering equipment and services.[17]

Selection and Assignment of Frequencies in the 900-MHz Band.

Preliminary Considerations

60. As pointed out, we have allocated 30 MHz for use in providing service to persons qualified to operate at 900-MHz. This has been done in two bands, with 15 MHz allocated in the 806-821 MHz band and 15 MHz in the 851-866 MHz band.

61. In both trunked and conventional systems, mobile station transmitting frequencies will be selected from those available in the 806-821 MHz band and base station transmitting frequencies, from those allocated in the 851-866 MHz band. There will be uniform 25-kHz channeling;

[17] Our experience under the licensing procedures presently employed in the private services, where hearings have not been necessary, contrasted to the administrative delays occasioned by the processes applicable to common carrier regulation, confirms our views in this regard. We see no reason why the same benefits should not be translated to apply at 900 MHz.

and the spacing between associated mobile and base station frequencies, in each instance, will be 45 MHz.

62. This 30-MHz allocation makes possible a number of options for system design. For example, we could authorize 600, single-channel conventional stations. On the other hand, we could have 30 trunked systems, with 20 channels each; or 60, with 10 channels; or 120 with 5 channels. There are other combinations, too; but the important feature of our plan is its flexibility. This flexibility gives assurance that competitive forces in the market place can operate freely and allow the establishment of the best combination of services and facilities possible under the present state-of-the-art.

63. But, initially, as a matter of policy, we have decided not to authorize, in any one area or region, more than 100 25-kHz channel pairs for conventional use and 200 25-kHz channel pairs for trunked systems. The remaining 300 25 kHz frequency pairs will be temporarily reserved to give us an opportunity to study system development trends in the available spectrum. Further, we do not want to allow one type of system to dominate the market, where the other might better serve the needs and requirements of eligible users. Accordingly, as an interim safeguard, we will impose the restriction mentioned.

Frequency Assignments for Trunked Systems

64. Applicants for trunked systems will be assigned frequencies in groups, from 5 to 20 channels, depending on the nature of the service to be provided; the area to be served; the class and number of users or customers to be offered facilities; and a number of other factors.

65. Mobile station transmitting frequencies for trunked operation will commence with Channel No. 1 at 820.9875 MHz, followed by Channel No. 2 at 820.9625 MHz, and proceed to the band end with uniform 25-kHz channeling.

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Base station transmitting frequencies will commence with 865.9875 MHz, Channel No. 1, followed by 865.9625 MHz, Channel No. 2, and proceed to the band end with uniform 25-kHz channeling.[18]

Frequency Assignments for Conventional Systems

66. Applicants for conventional systems will be assigned channel pairs in accordance with applicable loading criteria.[19] Where justified, on the basis of the showing made by the applicant, one or more channel pairs will be made available to him for use in his system of communications. However, the absolute maximum number of channels that will be made available for use in a conventional system will be five, regardless of the number of mobile units the applicant plans to serve.[20]

67. Mobile station transmitting frequencies for conventional systems will commence with Channel No. 1 at 806.0125 MHz, followed by Channel No. 2 at 806.0375 MHz, and proceed to the band end with uniform 25-kHz channeling. Base station transmitting frequencies will commence with Channel No. 1 at 851.0125 MHz, followed by Channel No. 2 at 851.0375 MHz, and proceed to the band end with uniform 25-kHz channeling.[21] As in the case of trunked systems, discussed immediately, above, the spacing between associated mobile and base station frequencies will uniformly be 45 MHz.

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[18] The band ends referred to will be determined by the policy mentioned, above, at para. 63.

[19] See Section 89.802, *et seq.*, of the new rules.

[20] Where an eligible has requirements for additional frequencies, he must meet those needs through the use of a trunked system. We emphasize a maximum of 5 channel pairs will be assigned to any one licensee for use in a conventional system.

[21] As in the case of trunked systems, the interim criteria will apply, here, too. See para. 63, *supra*.

Authorization of Operational Fixed Stations in the 900-MHz Band

68. Much thought has been given to whether operational fixed stations should be permitted in the 900-MHz band. However, for the same reasons that have persuaded us in the past, we will only allow control stations and then only with specific limitations similar to those now applying to such stations in the 450-470 MHz band.

69. These limitations require that the control station operate on the assigned frequency of the associated mobile station. Also its use is subject to the condition that harmful interference not be caused to stations of licensees authorized to use the frequency for mobile service communications. Further, and in order to minimize potential interference, directional antennas will be required at control stations and their power output will have to be adjusted so that the control station's signal at the controlled station will not exceed by more than 6 dB the signal of an associated mobile transmitting from the same location as the control station.

Protection Parameters for Operation in the 900-MHz Band

In General

70. We gave much thought to the development of appropriate protection parameters for stations operating at 900 MHz. In doing so, we kept in mind our basic objective of authorizing multiple systems of communication capable of providing a variety of services to a large number of eligible persons and, also, to the public, in general. To attain this objective, we knew we would have to have a regulatory plan which would be relatively simple to implement and which would allow us to pass on each proposal in an orderly but expeditious manner, without recourse to

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highly complex and time consuming procedural and adjudicatory processes.[22]

71. With this in mind, we first looked into the question of whether protection should be accorded both co-channel and adjacent channel operations. We concluded that adjacent channel protection would not be necessary in making frequency assignments. Our plan of placing all base station transmitters in one band separated by 45 MHz from the base station receiving band eliminates the potential for adjacent channel interference between base stations. We recognize the potential of random adjacent channel interference when a mobile receiver is in close proximity of a base station transmitting on an adjacent channel. We believe, however, that the probability of intersystem interference to be so small and random as not to be a serious problem. Also, the possibility of intersystem adjacent channel interference within a trunked group of frequencies, in our view, can and should be minimized or eliminated by the system operator. Our greatest concern (with regard to adjacent channel interference possibilities) had been that control stations, operating at fixed points, might cause harmful interference of this type. But by limiting power and by our other requirements, we feel that the adjacent channel interference potential will be controlled. Accordingly, we have concluded that adjacent channel interference need not be taken into account in 900 MHz channel assignments, and we have not done so.[23] And, by taking this approach, we will be able to achieve great flexibility

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[22] In the future, when our computer procedures and capabilities are advanced further, new licensing and assignment methodology will be utilized. But, for the present, we must evaluate proposals on the basis of the standards and criteria set out in our opinion and our new 900 MHz rules.

[23] This is our present thinking, nevertheless we may make a further evaluation of this factor in our Chicago Spectrum Management Region.

in the assignment and use of frequencies in both conventional and trunked systems of communications.

72. We also concluded that transmitter intermodulation interference would not be a factor in making frequency assignments. The principal source of this interference stems from high powered base stations operating in close proximity, both physically and frequency wise. Trunked systems will create this situation by their very nature. But odd order transmitter intermodulation products of the magnitude to cause a problem will fall outside this particular band and the overall allocation structure is such as to minimize the problem.

73. In summary, we have concluded that adjacent channel interference and possible interference from intermodulation can be disregarded, in this instance, in establishing protection parameters for 900-MHz systems.[24] It follows that our assignment plan is based primarily on co-channel operating characteristics, particularly in terms of propagation of signals and on the design of available receiving equipment. With this decided, we turn to a discussion of the various considerations which went into determining the specific co-channel separation requirements for trunked and conventional systems of communication.

Co-Channel Station Separation

74. As just mentioned, in establishing mileage separations for co-channel stations, a number of factors were taken into consideration. Among these were permissible power and antenna height. Next, whether the same maxima should be specified for trunked and conventional systems; and, in addition, whether these maxima should be identical for urban, in contrast to suburban, operations. Also,

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[24] As in the case of potential adjacent channel interference, the possible impact of intermodulation interference may be studied further in our Chicago Spectrum Management Region.

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the quality of service and the related consideration, interference levels, are important parameters.

75. As to the specification of permissible power and antenna height, propagation characteristics at 800 MHz and probably station locations were looked into.[25] On the latter point, we have concluded that most trunked and conventional stations will be established in areas of relatively high population density. It would seem certain that trunked systems would be located there, since they will be expensive to construct and operate and only in the larger markets will there be present an economic base sufficient to support them. Further, it is most likely that the majority of conventional systems will also be located in heavily populated areas, because it is in such locations that greatest frequency shortages have been experienced.

76. Our study of the desirable level of signals in 900-MHz systems, led us to conclude that we should set maximum power and antenna height at 1 kilowatt (ERP) and 1000 feet (AAT), or the equivalent, respectively.[26] This

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[25] On propagation at 900 MHz, we studied both our own R-6602 curves and the so-called Okumura curves, referred to and relied on by a number of the parties filing comments. We found no great differences in the signal levels predicted. The major distinction between them involved the dissimilar receiving environment in which the test data was gathered. As to this, we applied a correction factor; and with it, there was very close correspondence in the two sets of data. Overall, we believed the data to be highly reliable, and we used it in predicting signal level contours and corresponding service area mileages.

[26] Our objective is to provide a high quality signal to about 50 percent of the locations, 50 percent of the time, within the service area of the stations. To accomplish this objective would require a signal approximately 20 dB above receiver threshold, at the edge of the service area. We have also assumed, based upon the record of this proceeding, that receivers will be available with a sensitivity of 0.45 microvolts across a 50 ohm antenna terminal for 20 dB SINAD. On this basis, the average desired signal level should be 40 dBu at the edge of the service area. Based on avail-

will be for all trunked operations and for those conventional systems with transmitter sites located within 15 miles from the geographic center of the Urbanized Areas listed at Table 1 of Section 89.751(g) of our new regulations. For conventional systems with transmitter sites more than 15 miles from the geographic center of the referenced Urbanized Areas, we felt lower power and antenna height could be used. In those regions there are generally fewer tall buildings; line-of-sight conditions are not uncommon; and the absorption factor is down. Accordingly, we felt it reasonable to set the limits at 500 watts (ERP) and 500 feet (AAT), respectively.[27] Nonetheless, should

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able propagation data, R-6602 curves modified to account for mobile antenna receiving heights, urban, suburban, or rural environments, terrain roughness, etc., this quality of service could be afforded in the order of 20 miles in an urban environment with a 1000 feet (AAT) antenna and 1 kilowatt power (ERP). To maintain this quality of service with a margin to permit solid capture of the FM receiver, the interfering signal from a distant co-channel station should be 10 dB less than the desired signal at the boundary of the service area of the protected station. This would mean that the interfering signal could not exceed 30 dBu in 10 percent of the locations, 50 percent of the time.

The value of 40 dBu was employed for a number of reasons, but in simple terms we selected it because we determined that it would, in the absences of interference, enable the licensee of a 900-MHz facility to give a high level of service in the area in which he planned to operate. At 900 MHz this is important, because systems and equipment will be relatively expensive; and there must be some compensating factor for the investment required to establish service.

[27] While it might be argued that greater range in suburban areas is desirable, because the distances between points of communication would seem likely to be more than that found in urban areas, we still believe the lower limits are warranted. In part, our reason has to do with our plan for loading suburban-conventional systems, where 25-mile radii will be employed, not 15-mile radii used in connection with urban-conventional systems. In any event, under suburban/rural conditions, we would expect a useable signal to be received at essentially the same levels as for urban stations with greater power and antenna height.

these power and antenna height parameters for suburban stations prove to be unduly restrictive, we will take the steps necessary to adjust these values. These are maximum values for power and antenna height; and the applicant, of course, must justify his request based on his coverage requirement.

77. Summarizing on this aspect of the rule making, we have set 1 kilowatt (ERP) and 1000 feet (AAT) as the maximum permissible power and antenna height for trunked systems and for urban-conventional facilities. For suburban-conventional systems, we selected 500 watts (ERP) and 500 feet (AAT) as the limits.[28] With these powers and antenna heights we are certain all classes of stations will offer satisfactory service to those using them.[29] But there is one further matter to take into account, establishing limits on interference.

78. As to interference, we concluded that the undesired signal should be 10 dB down from the desired one. This will mean that at the 40 dBu contour, of the protected

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[28] The Commission, however, is concerned with the practice of serving mobile users who require small areas of coverage on trunked systems which are essentially wide area coverage systems. Such situations are known to exist in the operation of wide-area repeaters in the lower land mobile bands. While not prohibited, this practice should be discouraged in the 900 MHz band, as it could lead to serious deficiencies in overall spectrum utilization. Accordingly, the Commission will be watchful of the effects of such practice on the efficient development of the 900 MHz band and may impose corrective regulation in the future if warranted.

[29] As previously mentioned, equivalent power for antenna heights in excess of 1000 feet are established and set out at Section 89.651 (c), Table 1 of the new rules. For a trunked or urban-conventional station, 1 kilowatt (ERP) is the maximum power regardless of whether an antenna of less than 1000 feet is employed. For suburban-conventional stations, the same principle applies, that is, the maximum power is 500 watts (ERP) regardless of the height of the antenna above average terrain, even when it is less than 500 feet (AAT).

station, the signal strength of the lower priority facility should not exceed 30 dBu. Translated in terms of mileage, it simply means that the two facilities, to afford one another the protection required, must be 70 miles apart. For suburban conventional stations, the distance is less, 45 miles. This is due to the use of lower power and antenna height. Accordingly, these are the values we will use, but they will not be applied in the same manner to trunked and conventional systems, due to the complexity of the loading problem, to be discussed, below.

Trunked Systems

79. As just stated, the separation between co-channel trunked systems is to be 70 miles. This standard is to apply in every case, regardless of where the trunked facility is located. This is feasible in trunked operations, because the applicant must make an initial showing that the facilities requested will be occupied in conformity with the applicable loading criteria.

Conventional Systems

80. As we have said, for urban-conventional systems, a basic co-channel separation of 70 miles is required to enable the licensee to produce signal levels sufficient to give good, or highly reliable, service. For suburban-conventional systems, the separation is 45 miles. But we cannot apply this criterion directly, because, for conventional system, special provisions must be made to make loading feasible. For this purpose, for now, we have decided to use a simple protected-area approach. For urban-conventional systems, this will be that area circumscribed by a circle with 15 mile radii. This will be measured from the designated geographic center of the Urbanized Area involved, as set out in Section 89.751(g), Table 1, of the new rules. Accordingly, all applications for urban-conventional systems (those specifying a transmitter site within 15 miles from the geographic center of the mentioned

Urbanized Areas) will be considered, for loading purposes, with any existing or proposed co-channel facility in that area until the channel in question is fully occupied in accordance with the loading criteria set out in our new rules. Further, once a channel pair is assigned for use within the reference 15 mile radii, it will be treated as unavailable for use by any applicant specifying an antenna site outside the 15 mile area, in that vicinity, of course.

81. For suburban-conventional systems (those with transmitter sites more than 15 miles from the geographic center of the mentioned Urbanized Areas), we have decided to consider, for loading purposes, all proposals for facilities specifying a transmitter site within 25 miles of the site of an existing suburban station or within 25 miles of the site specified in a prior filed proposal. Once the channel pair in question is occupied, in accordance with applicable standards, it will be treated as no longer available. Further, once a channel has been selected for occupancy by suburban-conventional stations, it will be unavailable for assignment for use in an urban-conventional system, that is, in the same general area.[30]

82. As stated, these measures are necessary to allow us to load conventional systems vertically. To do this, we must have some area or point of reference. The latter would be a more desirable approach; but as the number of co-channel stations multiplied, the problem of determining which systems should be taken into consideration in deciding whether a given channel was fully occupied or not rapidly becomes an impossible one, at least at the

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[30] We wish to be clear on what we mean here. We do not intend to imply that a frequency pair, once designated for use in either an urban-conventional, or suburban-conventional, system, may not be used elsewhere for one type of system or another. This is not the case. Locally, its use will be restricted. Nationally, it will not be.

present stage of development of our frequency management program.

83. Accordingly, we plan to use the 15 and 25 mile radii specification. With this decided, it is necessary to adjust mileage separations for conventional stations to account for the protected areas. Therefore, in the case of urban-conventional systems, assignments on occupied co-channel frequencies will not be made unless the proposed site of the new facility is at least 85 miles from the geographic center of the Urbanized Area involved. As to suburban-conventional systems, assignments on occupied co-channel pairs will not be made unless the site of the proposed station is at least 70 miles from the first suburban co-channel station authorized and this is to be the rule regardless of whether the channel assigned to that station is fully occupied or not.[31]

Channel Loading Standards

In General

84. For channel loading, in the absence of actual experience and data, especially for trunked systems of radio communication of the type we have under consideration at 900 MHz, we felt we should rely on the number of mobile units in operation as a base from which to set up channel occupancy figures. We have used mobile units, for, over the years, in the land mobile services, we have developed a series of guides for determining the channel requirements of licensees in the several services.

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[31] In any case in which the proposed transmitter site is within the 15 and 25 mile radii, such application, of course, will be studied with co-channel stations in the protected areas, until such time as the channel is loaded in accordance with applicable standards. We would note, however, that all of these procedures are subject to further study and review, and based on day-to-day operating data, we may find they can be improved. Should this be so, appropriate steps will be taken to reflect this experience.

85. For example, in the Police Radio Service, we have found that, as a general rule, a channel pair can be employed in an effective manner in dispatching 50 mobile units of the vehicular type and an even greater number of portable or hand carried units. In this we recognize that there are no two situations exactly alike and that there are many factors to be taken into account. Among them are average message length; the number of units in operation in any given time period; the number of times, each hour, the dispatcher and mobiles originate calls; the number of dispatchers on duty at any one time; the size of the system (the number of communication channels available for use at any one point in time); and, certainly, the nature of the functions and activities of the licensee. All of these factors have an impact on system capacity. Nevertheless, as an overall or average measure, we have determined that in the Police Radio Service, 50 vehicular mobile units per channel is a reasonable and realistic criterion to apply in licensing stations in that service.

86. This may be contrasted to the Business Radio Service. There, the frequencies allocated were intended to be shared more intensively, because they were designated to serve a much broader group of eligibles and there were inherent differences in the nature of the communications of businessmen and of police departments. Consequently, higher loading standards were employed, with each frequency or channel licensed to serve approximately 90 mobiles. In densely populated areas, where the demand for business frequencies turned out to be very great and message loads correspondingly heavy, this norm did not always provide licensees with the communication capabilities they felt they needed. Nonetheless, overall, the 90 mobile criterion proved to be a good guide in licensing stations in the Business Service.

87. Similar conclusions have been arrived at as to frequency loading in the other services. To illustrate, in the

Taxicab Radio Service, we know that a frequency pair can be employed effectively in dispatching 150 mobiles or more; and we have set channel loading in that service at a higher level. Further, the communication needs and requirements of licensees in the Power and Petroleum Radio Services are not the same as those in other radio services. This is in part due to the fact that radio facilities are used in different ways and for different purposes by licensees in the several services. But we have found that users can be grouped together for loading purposes; and that mobile units can serve as a good guide for frequency assignment purposes.

88. There is an added factor of some significance. Where a channel is assigned for the exclusive use of a particular licensee, circuit discipline of a high order can be maintained. It is relatively easy to do so, for the employees using the system are under the direct control of the licensee; and he has an interest in seeing to it that his messages to and from his mobile units are not delayed. Also, system monitoring can be performed in a more efficient manner, since station operators do not have to listen for the signals of other licensees. This eliminates, to a high degree, objectionable interference and message interruptions which cause inefficiencies. With these considerations in mind, we have differentiated between systems which are licensed to provide service to a single entity and those serving several licensees. In doing this, we have designated categories for single licensees; for 2 to 5 licensees; and for over 5 licensees.[32]

89. Summarizing, then, on the basis of the foregoing considerations and also from what we have learned from the vast record in this proceeding, we have developed the norm or general rules to assist us in determining when an assigned frequency is to be treated as occupied, or not

[32] See Section 89.802 of the new rules which deals with loading requirements for conventional systems.

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occupied, in terms of its capacity to serve in an effective way the requirements of the users. We used this background in assisting us in setting the loading requirements at 900 MHz.

Loading Trunked Systems

90. For trunked operations, we have separated user groups under five major headings, with police and fire eligibles in one group; business licensees in another; interurban and urban passenger motor carriers in the third group; and, in the fourth group, the "all other" classification, we would include the remaining service categories. For radiotelephone operations, a special criterion is used, due to the nature of such systems of communication.[33]

91. While we recognize that trunking provides added efficiencies in the use of the spectrum and improved communication service, to the present time we are not certain of the degree of improvement in channel capacity. In this regard, while we recognize certain data does exist as to wire line telephone operation, we are not sure that this same criteria can be applied to the types of 900-MHz systems with which we are concerned, here. There are many variables, and we feel that we do have sufficient experience with the interplay of these factors to permit us to establish definite loading standards at this time.

92. In the light of these considerations, but using such information as has been made available to us on this subject, we have designated levels for channel loading which we believe most closely approach what actual operating experience will indicate. Accordingly, although these criteria must be treated as interim in nature, we will require, until operating data becomes available, that they be fol-

[33] Applicants may apply for radiotelephone systems only where trunked operation is planned. Conventional systems, because of the efficiency element, may not be employed for this mode of use.

lowed. In this connection, we will ask our licensees to maintain traffic records to assist us in any future re-evaluation of our standards.

93. For the purpose, then, we require trunked system serving the various user groups to be loaded as follows:[34]

	5 channels	10 channels	20 channel
Police and Fire Group	300	750	1500
Business Group	500	1000	2000
Passenger Motor Carriers	800	1600	2500
All other Groups	400	800	1600
Radiotelephone Group	200	400	800

94. It is our belief that these interim loading parameters will provide users with high quality service on an efficient basis. But, as we have said, we consider these measures as interim ones, which, if necessary or desirable, will be modified to conform with what actual operating conditions show loading should be. Further, as we have indicated, we will not permit conventional systems to be used for radiotelephone operations. Our basic reason for this is that in conventional mode, principally because of the nature of telephonic communication, use of single channels or groups of single channels is inefficient for that purpose.

Loading Conventional Systems

95. Loading standards for conventional systems were developed out of the general considerations which we have outlined, above. As in the case of trunked facilities, we have grouped together users which we feel have similar or at least compatible communication requirements. Thus, police and fire users are grouped together. For them, the loading criterion will be 50 mobiles or 100 portable units.

[34] See Section 89.801 of the new rules which sets out loading requirements for trunked facilities.

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This standard is to apply only where the system is not shared with other police and fire users.

96. We have pointed out that some conventional systems will be vertically loaded. In such cases, it is appropriate to use different criteria; and we have done so. Thus, where a channel is shared by 2 to 5 licensees, the 40 vehicular, 80 portable rule will apply. Where it is used by over 5 licensees, the standard will be 30 vehicular and 60 portable units. This is for the police and fire group. The requirements for other groups are set out in the pertinent loading table.[35]

97. There is one difference in loading trunked and conventional systems which we will mention. In the former, no provision is made for eligibles in the Taxicab Radio Service. This is because the method of communication used by taxicab companies is such that no improvement in it can be achieved through trunking. This is the case in that communications generally flow from the dispatcher to the mobile units. Also, we have made no provision in the Taxicab Group for "portables". This is based on the fact that this kind of use is not usual in taxicab operations.

98. In order to qualify for a channel pair for use in a conventional system, an applicant must certify that, in his service category, whatever that might be, he will have a minimum of 70 percent of the mobiles specified in operation not later than 8 months from the date of the grant of his proposal. If 70 percent of the mobiles specified in the applicant's proposal equals 70 percent of the occupancy requirement of the applicant's service category or group, then the channel pair or pairs involved will be assigned for his exclusive use. Also, just as in the case of trunked operations, when a licensee is able to show that his facility is loaded to 90 percent of its assigned capacity, he may then

[35] See Section 89.802 of the new rules which sets out the various user groups and gives loading requirements for each.

apply for an additional channel pair or pairs, depending on the facts of the case.

Loading Systems Serving Multiple Service Groups

Trunked Systems

99. As we have indicated, we have not allocated the frequencies to the various land mobile services. Therefore, all persons will be permitted to share systems with other eligibles in the private services. Systems serving this type of mix of eligibles in the private services will be loaded in accordance with the "Business Radio Group". This will mean for a 5-channel system, loading will be set at 500 units; for a 10-channel system, at 1,000 units; and for a 20-channel trunked system, 2,000 mobile units.

Conventional Systems

100. The same principle as used in trunked operations will apply to conventional systems serving a mix of users. There, we will apply the 70/140 criterion, that is 70 mobiles and 140 portables, where shared by two through five users, and the 50/100 criterion where shared by more than five licensees, are the standards for channel occupancy.

Other Considerations Applying to Loading Trunked and Conventional Systems

101. In loading trunked and conventional systems there are certain additional considerations which must be given attention. In this connection, we will examine each proposal to determine the mode of operation asked. Where, for example, an applicant requests a mobile relay facility, if he is to share, it must be with others using the same mode of communication, i.e., mobile relay with mobile relay.[36]

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[35] We wish it to be very clear that we will authorize radiotelephone service only on trunked systems.

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102. Further, two-frequency simplex operation will not be combined with mobile relay use; nor will we combine either of these modes of operation with full duplex systems. They are not compatible with one another.

103. In general, then, we will only assign the same frequencies for systems which involve the same mode of operation. In addition, we will not, where possible, mix user groups in vertical loading. This is because the loading criteria applicable varies, and this makes it undesirable and, at times, impossible to mix users. However, where this becomes necessary, the loading standard for the "mixed group" will be used. Also, in assigning frequencies for shared use in conventional systems in any one particular area, we will consider, among other things, the nature of the applicant's activities.

104. These are the major factors that we will take into account in loading channels. But we should note that where an applicant demonstrates that he can meet the requirement for occupancy in the group in which he applies, he will be permitted to use the license facility in any way permitted in the service in which he is eligible.

105. Accordingly, in loading 900 MHz systems, we will not only be concerned with the number of vehicles or portables the applicant plans to use, but we will also take into consideration the planned mode of operation; the service group into which the applicant falls; and, among other features, the number of persons licensed to use a given frequency in a given area. We plan to build our assignment plan on this basis; however, we will continue to examine our methodology, and we will take corrective steps to improve it when we can.

Additional Requirements for Common User Systems

106. One further matter, in order to promote the competition envisioned at 900 MHz and, also, to prevent manu-

facturers or equipment companies from gaining dominance in this market, we will limit such concerns to a single trunked system in a market and to no more than a total of 5 trunked systems nation-wide, except on a showing that the limitation should not apply in a given case. This approach will offer the opportunity to potential competitors to enter the field and to compete successfully with entities of the type mentioned. We are permitting equipment companies into this field, because we want to bring to bear their experience and know-how in the development of trunked and conventional systems. We feel this approach has advantages, for these facilities will be expensive to construct and we are not certain that the means of financing them will be otherwise available at initial stages. Once proven out, and the manufacturers will have an incentive to make the investment to accomplish this, a greater amount of capital will most surely be available. Further, we want pilot systems to be established at an early date; and the manufacturers have clearly demonstrated a willingness to enter the market immediately. While we proceed along these lines with caution, because of possible adverse impacts on competition, with the safeguards we have built into our rules we foresee no problems. Also, we will watch the progress made; study any effects; and take remedial action. However, we wish to observe that we may find no adverse impact; and, in that case, we would extend the privilege to manufacturers to operate in additional markets.

107. In addition to the foregoing, we will expect manufacturers providing commercial service to so design their systems that equipment obtainable from different companies can be readily used in it. We anticipate that an effort toward this end will be undertaken at an early date. However, should this not turn out to be the case, we may find it necessary to develop system standards, ourselves.

108. Finally, we wish to be clear that it is our intention to review and study continually all aspects of our assign-

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ment plan. In this regard, we fully recognize that the subject concept is new. It is in part untried and untested. Most likely changes and modifications will have to be made; and we will be alert to adjust our policies, standards, and criteria to what the public interest requires. This will be done on our own motion; and, in addition, we would expect, and we request, significant input from the land mobile industry and from land mobile users and those representing them. However, we are confident of the soundness of the structure of the measures we have adopted; of the desirability of the goals and objectives we have set for ourselves; and of the benefits to the public that will flow out of our approach to licensing at 900 MHz.

Subpart S

109. Subpart S will only be added to Part 89. However, it should be understood that the rules set out in Subpart S are to apply to all systems of communication included under Parts 91 and 93 of the rules. In the future, we plan to incorporate these rules with those of Parts 91 and 93.

110. We would also point out that some of the procedural rules set out in Subpart S may not be in complete harmony with the procedural rules contained in Subpart F of Part 1. Where there is a conflict, the rules in new Subpart S will, of course, be controlling.

General Accounting Office Requirements

111. Our new rules will require applicants and licensees of 900 MHz systems to submit certain information and data in addition to that now furnished. This, of course, is subject to approval by the General Accounting Office (GAO). Steps will be taken to obtain the necessary clearance. When GAO has decided the matter, a public notice will be issued. Until then applications may not be filed.

112. Accordingly, IT IS ORDERED, effective June 17, 1974, That Parts 2, 89, 91, and 93 of the Rules are amended as shown in Appendix B, attached hereto; and That the interim guidelines governing the developmental authorization and operation of cellular systems, set forth in Appendix C, are adopted. Authority for this action is found in Sections 4(i) and 303 of the Communications Act of 1934, as amended.

113. IT IS FURTHER ORDERED, That the proceeding in Docket No. 18262 IS TERMINATED.

FEDERAL COMMUNICATIONS COMMISSION

VINCENT J. MULLINS
Secretary

Attachments

APPENDIX A

Alphabetical List of Participants

Aeronautical Radio, Inc.
AIL, A Division of Cutler-Hammer
Airsignal International, Inc.
American Petroleum Institute
American Telephone and Telegraph Company
American Transit Association
Association of American Railroads
Association of Maximum Service Telecasters, Inc.
Associated Public-Safety Communications Officers, Inc.
Atlanta Transportation Association
Boston Cab Company
Chicago Communication Service
Chicago Transit Authority
City of Fort Lauderdale, Florida
Collins Radio Company
Communications, Inc.
Digital Paging Systems, Inc.
Electronic Industries Association
Gainesville Industrial Electric Company
General Electric Company (Major Appliance Business Group)
General Electric Company (Mobile Radio Department)
GTE Service Corporation
Henry Ford Hospital
Integrated Systems Technology, Inc.
International Association of Chiefs of Police
International Association of Fire Chiefs
International Bridge, Tunnel, and Turnpike Association, Inc.
International Municipal Signal Association
Jeremiah Courtney
Lake Side Communications
Magnavox Company
Martin Marietta Corporation

Mobilfone, Inc.
Motorola
Mueller Electronics
National Association of Broadcasters
National Association of Business and Educational Radio, Inc.
National Association of Radiotelephone Systems
National Association of Regulatory Utility Commissioners
New Jersey Hospital Association
Radio Broadcasting Company
Ram Broadcasting Corporation
RCA Corporation
Sangamo Electric Company
Scott Communications Company
Southeast Ohio Emergency Medical Service
Special Industrial Radio Service Association, Inc.
St. Louis Electronics
Terminal Taxi Company
United States Department of Justice
United States Independent Telephone Association
United States Office of Telecommunications Policy
United States Small Business Administration
United Telecommunications, Inc.
Utilities Telecommunications Council
Xerox Corporation
Yellow Cab Company of Greater Buffalo, Inc.

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APPENDIX B

Parts 2, 89, 91, and 93 of Chapter I of Title 47 of the Code of Federal Regulations are amended as follows:

PART 2—FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS: GENERAL RULES AND REGULATIONS

1. In § 2.106, columns 5-11 of the table are amended to read as follows:

§ 2.106 Table of Frequency Allocations.

United States		Federal Communications Commission				
Band (MHz) 5	Allocation 6	Band (MHz) 7	Service 8	Class of Station 9	Frequency (MHz) 10	Nature of SERVICES of stations 11
• • • • • • • • • •						
470-902	NG. (NG30) (NG43) (US36) (US88) (US100) (US116) (NG63) (NG65)	• • •	• • •	• • •	• • •	• • •
		806-821	LAND MOBILE.	Land Mobile.		Conventional and Trunked Systems.
		821-825	LAND MOBILE.			Reserve.
		825-845	LAND MOBILE.	Land Mobile.		Cellular Systems.
		845-851	LAND MOBILE.			Reserve.
		851-866	LAND MOBILE.	Base.		Conventional and Trunked Systems.
		866-870	LAND MOBILE.			Reserve.
		870-890	LAND MOBILE.	Base.		Cellular Systems.
		890-902	LAND MOBILE.			Reserve.
902-928	G. (US36) (US115)				915	Industrial scientific, and medical equipment.
928-960	NG.	928-947	LAND MOBILE.			Reserve.
	(US36) (US116) (US)	• • •	• • •	• • •	• • •	• • •
• • • • • • • • • •						

2. In the list of footnotes immediately following the table in § 2.106, footnote US115 is amended and a new US footnote is added in proper numerical sequence, to read as follows:

US115 The Frequency 915 MHz is designated for industrial, scientific, and medical purposes. Except as provided by US215, emissions must be confined within the limits of ±13 MHz of that frequency. Radiocommunications services operating within those limits must accept any harmful interference that may be experienced from the operation of industrial, scientific, and medical equipment.

US215 Emissions from microwave ovens manufactured on and after January 1, 1980, for operation on the frequency 915 MHz must be confined within the band 902-928 MHz. Radiocommunications services operating within the band 928-940 MHz must accept any harmful interference that may be experienced from the operation of microwave ovens manufactured before January 1, 1980.

Part 89—Public Safety Radio Services

2. In § 89.103(a), the table is amended to read as follows:

§ 89.103 Frequency stability.

(a) • • •

Frequency range	All Fixed and Base Stations	All Mobile Stations	
		Over three watts	Three watts or less
MHz	Percent	Percent	Percent
Below 25	0.01	.01	.02
25 to 50	.002	.002	.005
50 to 450	(1) .0005	.0005	.005
450 to 470	(3,4) .00025	.0005	.0005
470 to 512	.00025	.0005	.0005
806 to 820	.00015	.00025	.00025
851 to 866	.00015	.00025	.00025
950 to 1427	(2)	(2)	(2)
1427 to 1435	(5) .03	.03	.03
Above 1435	(2)	(2)	(2)

• • • • • • • • • • •

3. In § 89.105, paragraph (a) is amended and paragraph (e) is added to read as follows:

§ 89.105 Types of emission

(a) Except as provided in paragraphs (c), (d), and (e) of this section, stations in these services will be authorized to use only A3 or F3 emission for radiotelephony. The authorization to use A3 or F3 emission is construed to include the use of tone signals or signalling devices the function of which is limited to establishing or maintaining voice communications or to actuate emergency warning devices used solely for the purpose of advising the general public or emergency personnel of an impending emergency situation.

• • • • • • • • • • •

(e) Operation in the frequency bands 806 to 821 and 851 to 866 MHz is limited to F3 emission.

4. In § 89.107 (b)(2), the Table is amended to read as follows:

§ 89.107 Emission limitations.

• • • • • • • • • • •

(b) • • •

(2) • • •

Frequency Band MHz	Authorized Bandwidth (kHz)	Frequency Deviation (kHz)
25-50	20	5
50-150	(1) 20	(1) 5
150-450	20	5
450-470	(2) 20	(3) 5
470-512	20	5
806-821	20	5
851-866	20	5

• • • • • • • • • • •

5. In § 89.109, Paragraphs (d) and (i) are amended to read as follows:

§ 89.109 Modulation requirements.

• • • • • • • • • • •

(d) Each transmitter in the frequency ranges 25 to 50, 150.8 to 162, 450 to 512, 806 to 821, and 851 to 866 MHz shall be equipped with an audio low-pass filter. Such filter shall be installed between the modulation limiter and the modulated stage and shall meet the specifications contained in paragraph (h) or (i) of this section. The provisions of this paragraph do not apply to transmitters of licensed radiocommunications systems operated wholly within the limits of one or more of the territories or possessions of the United States or

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Alaska, or Hawaii, except those systems operating in the frequency ranges 806 to 821 MHz, and 851 to 866 MHz.

• • • • • • • • • • •

(i) For stations authorized in the 450-470 MHz band on or after November 1, 1967, and for all stations authorized in the 470-512, 806-821, and 851-866 MHz bands, at audio frequencies between 3 kHz and 20 kHz, the low-pass filter required by the provisions of paragraph (d) of this section shall have an attenuation greater than the attenuation at 1 kHz by at least:

$$60 \log_{10} (f/3) \text{ decibels}$$

Where "f" is the audio frequency in kHz. At audio frequencies above 20 kHz, the attenuation shall be at least 50 decibels greater than the attenuation at 1 kHz.

• • • • • • • • • • •

6. In § 89.111(b), the Table is amended to read as follows:

§ 89.111 Power and antenna height.

• • • • • • • • • • •

(b) • • •

Frequency range (MHz)	Maximum plate power input to the final radio freq. stage (watts)	Maximum effective radiated power (watts)
1.3 to 3	2000	
3 to 25	1000	
25 to 100	500	
100 to 470	600	
470 to 512		1000
806 to 821	(2)	(2)
851 to 866	(3)	(2)
Above 950	(1)	(1)

1. To be specified in the station authorization.

2. For power limitations see Section 89.651

3. The output power of a transmitter on any authorized frequency in this service shall not exceed 250 watts (24 dBw).

• • • • • • • • • • •

7. In Part 89, a new Subpart S is added to read as follows:

SUBPART S—SPECIAL REGULATIONS GOVERNING LICENSING AND USE OF FREQUENCIES IN THE 806-821 MHz AND 851-866 MHz BANDS

Sec.

General Information

89.601 Purpose.

89.602 Definitions.

89.603 Organization and applicability of rules.

89.604 Eligibility.

89.605 Station identification.

General Restrictions and Limitations on Operation of Conventional and Trunked Systems Authorized in the 806-821 MHz and 851-866 MHz Bands

89.651 Limitations on power and antenna height.

89.652 Restrictions on operational fixed stations.

89.653 Restriction on interconnection.

89.654 Restriction on permissible communications.

89.655 Limitations on use and mode of operation of systems licensed in the 806-821 MHz and 851-866 MHz bands.

89.656 Special conditions governing the furnishing of radio equipment by licensees.

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89.657 Restriction on licensing manufacturers and equipment suppliers to furnish service in the 806-821 MHz and 851-866 MHz bands.

89.658 Acceptability of transmitters for licensing in the 806-821 and 851-866 MHz bands.

Application and Processing Procedures

89.701 Forms to be used.

89.702 Supplemental information to be furnished by applicants for facilities under this subpart.

89.703 Supplemental reports required of licensees authorized under this subpart.

89.704 Processing applications.

Policies Governing the Selection and Assignment of Frequencies for Use in the 806-821 MHz and 851-866 MHz Bands

89.751 Selection and assignment of frequencies.

Channel Loading Requirements for Trunked and Conventional Systems

89.801 Trunked systems.

89.802 Conventional systems.

89.803 Other criteria to be applied in assigning channels for use in conventional systems of communication.

89.804 Other criterion to be applied in licensing channels for use in trunked ssytems of communication.

Subpart S—Special Regulations Governing Licensing and Use of Frequencies in the 806-821 MHz and 851-866 MHz Bands

General Information

§ 89.601 Purpose.

The purpose of this subpart is to set out the regulations governing licensing and use of conventional and trunked

systems of communication to operate in the 806-821 MHz and 851-866 MHz bands.

§ 89.602 Definitions.

Channel loading. The number of mobile stations assigned to operate on a co-channel basis within the same service area.

Co-channel interference. Interference caused in one communication channel by a transmitter operating on the same channel.

Conventional radio system. A method of operation in which one or more radio frequency channels are assigned to mobile and base stations but are not employed as a trunked group. An "urban-conventional system" is one whose transmitter site is located within 15 miles of the geographic center of any of the first 50 urbanized areas (ranked by population) of the United States. A "suburban-conventional system" is one whose transmitter site is located more than 15 miles from the geographic center of the first 50 urbanized areas. See Table 21, Rank of Urbanized Areas in the United States by Population, page 1-87, U.S. Census (1970).

Duplex radio communication. A method of radio communications, commonly used in radiotelephone systems, involving simultaneous two-way independent transmission in both directions accomplished through the use of two radio frequency channels, one for each direction of transmission.

Geographic center. The geographic center of an urbanized area is defined by the coordinates given at Table 1 of paragraph (g) of Section 89.751 of this subpart.

Trunk (telephony). A one- or two-way channel provided as a common traffic artery between switching equipment.

Trunk group. All of the trunks of a given type or characteristic that extend between two switching points.

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Trunked radio system. A method of operation in which a number of radio frequency channel pairs are assigned to mobile and base stations in the system for use as a trunk group.

§ 89.603 Organization and applicability of rules.

The rules in this subpart set forth the procedural and substantive regulations which apply, distinctly, to land mobile systems licensed to operate in the 806-821 MHz and 851-866 MHz bands. They are to be read in conjunction with applicable requirements contained in Parts 89, 91, and 93 of this chapter; however, to the extent the provisions of this subpart conflict with those set out in Parts 89, 91, and 93 of this chapter, the former are to be treated as controlling, insofar as licensing and use of frequencies in the 806-821 MHz and 851-866 MHz bands are involved.

§ 89.604 Eligibility.

The following persons and entities are eligible for licensing in the 806-821 MHz and 851-866 MHz bands.

(a) Any person or entity eligible for licensing under either Part 89, 91, or 93 of this chapter.

(b) Any person or entity proposing to provide dispatch service, subject to the restrictions set forth in this subpart, to any person or entity eligible for licensing under either Part 89, 91, or 93 of this chapter on a not-for-profit, cost-shared basis.

(c) Any person or entity, except wire line telephone common carriers, proposing to provide dispatch service, subject to the restrictions set forth in this subpart, to any person or entity eligible under Part 89, 91, or 93 of this chapter.

(d) Any person or entity, except wire line telephone common carriers, proposing to provide radiotelephone

service to the public over trunked systems of communication.

§ 89.605 Station identification.

(a) Conventional systems of communication shall be identified in accordance with existing regulations governing such matters.

(b) Trunked systems of communication shall be identified through the use of an automatic device which transmits the call sign of the base station facility at 30-minute intervals. Such station identification shall be made on the lowest frequency in the base station trunk group assigned to the licensee. Should this frequency be in use at the time station identification is required, such identification may be made at the termination of the communication in progress on this frequency. Identification may be by voice or International Morse Code. When the call sign is transmitted in International Morse Code, it should be at a rate of between 15 to 20 words per minute; and it should be transmitted by the means of tone modulation of the transmitter, the tone frequency being betweeen 800 and 1000 hertz. The level of modulation is to be high enough to be clearly discernable, but low enough not to be disruptive of voice communications in progress.

General Restrictions and Limitations on Operation of Conventional and Trunked Systems Authorized in the 806-821 MHz and 851-866 MHz Bands

§ 89.651 Limitations on power and antenna height.

(a) The maximum effective radiated power and antenna height, respectively, for base stations used in suburban-conventional systems of communication operating in the 851-866 MHz band shall be no greater than

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500 watts (27 dBw) and 500 feet above average terrain (AAT). These are maximum values; and applicants, of course, will be required to justify power levels and antenna heights requested.

(b) The maximum effective radiated power and antenna height, respectively, for base stations used in trunked and urban-conventional systems authorized in the 851-866 MHz band shall be no greater than 1 kilowatt (30 dBw) and 1000 feet above average terrain (AAT), or the equivalent thereof, determined from Table 1 of subparagraph (b) of this section. These are maximum values; and applicants, of course, will be required to justify power levels and antenna heights requested.

(c) Table 1. Equivalent powers and antenna heights for base stations operating in the 851-866 MHz band.

Antenna Height (AAT) (in feet)	Power (watts)[1]
4501-5000	65
4001-4500	70
3501-4000	75
3001-3500	100
2501-3000	140
2001-2500	200
1501-2000	350
1001-1500	600
Up to 1000 [2]	1000

Note 1. Power is given in terms of effective radiated power (watts).

Note 2. Maximum permissible power and antenna height are 1 kilowatt (ERP) and 1000 feet (AAT), respectively. Licensees will not be permitted to exceed the specified 1000-watt power limitations, regardless of whether or not use is made of an antenna which is less than 1000 feet in height (AAT).

(d) The maximum output power for mobile stations operating in the 806-821 MHz band is 100 watts (20 dBw).

§ 89.652 Restrictions on operational fixed stations.

(a) Execpt for control stations, operational fixed operations will not be authorized in the 806-821 and 851-866 MHz bands.

(1) Control stations associated with one or more mobile relay stations, will be authorized only on the assigned frequency of the associated mobile station. Use of a mobile service frequency by a control station of a mobile relay system is subject to the condition that harmful interference not be caused to stations of licensees authorized to use the frequency for mobile service communication.

(2) Control stations shall in all cases employ directional antennas with the main lobe of radiation directed toward the station, or stations, being controlled. In each case, the antenna used, consistent with reasonable design, shall produce a radiation pattern that provides only the coverage necessary to permit satisfactory control of each mobile relay station and limits radiation in other directions to the extent feasible.

(3) The strength of the signal of a control station, controlling a single mobile relay station, may not exceed, by more than 6 dB, at the antenna terminal of the mobile relay receiver, the signal strength produced there by a unit of the associated mobile station. When the fixed station controls more than one mobile relay station, the 6 dB control-to-mobile signal difference need be verified at only one of the mobile relay station sites. The measurement of the signal strength of the mobile unit must be made when such unit is transmitting from the control station location or, if that is not practical, from a location which is not more than one-fourth mile from the control station site.

(4) Each application for a control station to be authorized under the provisions of this paragraph shall be accompanied by a statement certifying that the output power of the proposed transmitter will be adjusted to comply with the foregoing signal level limitation. Records of the measurements used to determine the signal ratio shall be kept with the station records and shall be made available, upon request, for inspection by Commission personnel.

§ 89.653 Restriction on interconnection.

(a) Automatic interconnection with land line facilities shall be permitted only in those cases where the licensee provides radio telephone services to the public on a commercial basis.

(b) Systems licensed for use by an individual person or entity eligible under either Part 89, 91, or 93 of this chapter; or to any person or entity providing service to any person or entity eligible under either Part 89, 91, or 93 on a not-for-profit, cost-shared basis; or to any person or entity providing service on a commercial basis to any class or persons or entities eligible under Part 89, 91, or 93 of this chapter shall not be interconnected with the wire line facilities of any telephone company, except where such interconnection is accomplished manuually at the licensee's or user's place of business. Further, such interconnection may not be accomplished at any station or control point common to more than one licensee or user.

(c) In those situations where a licensee is permitted to interconnect with the facilities of a land line carrier pursuant to this section, it shall be the obligation of the local land line carrier to provide interconnection under reasonable terms and conditions upon reasonable request therefor.

§ 89.654 Restriction on permissible communications.

(a) Systems licensed for use by persons eligible under Parts 89, 91, and 93 of this chapter may be employed solely for the transmission of messages permissible in the radio service or services in which those persons are so eligible.

(b) Trunked radiotelephone systems licensed for use by the public shall not be subject to the limitation set out at paragraph (a) of this section.

§ 89.655 Limitations on use and mode of operation of systems licensed in the 806-821 MHz and 851-866 MHz bands.

(a) A system licensed for use by a person or entity eligible under either Part 89, 91, or 93 of this chapter may be employed for any purpose or operated in any manner which is consistent with the regulations governing the service in which the user is eligible; *Provided,* the loading standard which applies to the system is met and the channel or channel pairs are assigned to that person or entity for its exclusive use.

(b) Trunked systems licensed to be used by more than one person or entity may be employed for telephony, only.

(c) Systems licensed to provide radiotelephone service to the public on a commercial basis may offer such service employing full duplex, continuous carrier mode of operation: *Provided, however,* facilities of this type will be authorized for operation in trunked mode, only.

(d) Systems licensed to provide service to more than one person or entity eligible under Part 89, 91, or 93 of this chapter may, in conformity with the following restrictions, be used:

(1) Only for purposes expressly allowed under Parts 89, 91, and 93 of this chapter.

(2) Only by persons who are shown to be eligible for facilities, either under this subpart or in the radio services included under Parts 89, 91, and 93 of this chapter.

(3) Only for the transmission of messages or signals permitted in the service in which the participants are eligible.

§ 89.656 Special conditions governing the furnishings of radio equipment by licensees.

Every licensee of a trunked or conventional system furnishing service on a commercial basis, under this subpart, shall afford every user or customer the option of purchasing or leasing the necessary associated control and mobile station radio gear. Should the user or customer elect to lease the equipment, he (the user or customer) must be given the further right to cancel the lease agreement at any tim, without penalty, on ten days' written notice to the licensee.

§ 89.657 Restriction on licensing manufacturers and equipment suppliers to furnish service in the 806-821 MHz and 851-866 MHz bands.

No person engaged in the manufacture or sale of radio equipment to be used in systems authorized under this subpart, or who has any direct or indirect interest in any such manufacturing or sales enterprise, may be licensed to operate more than one common user trunked system of communications used to provide commercial service to eligibles or to the public in any one market, and no more than 5 such systems in the United States, unless a showing is made demonstrating that the public interest, convenience, and necessity would be served and that an exception is warranted.

§ 89.658 Acceptability of transmitters for licensing in the 806-821 and 851-866 MHz bands.

Except for transmitters used in developmental stations, each transmitter utilized by a station authorized for operation in these bands must be a type which is included on the Commission's current Radio Equipment List, or be of a type which has been type-accepted by the Commission for use in these bands.

Application and Processing Procedures

§ 89.701 Forms to be used.

Applications for conventional and trunked radio facilities shall be submitted on FCC Form 400, and such applications shall be filed with the Commission, at its offices in Washington, D.C. Where the facility is to be established in the Chicago Regional area, FCC Form 425 shall be used and all such applications shall be filed with the Chicago Regional Office.

§ 89.702 Supplemental information to be furnished by applicants for facilities under this subpart.

(a) Applicants for conventional or trunked systems of communication shall, in addition to the information required by FCC Form 400 or FCC Form 425 furnish the following data and material.

(1) Where the applicant is a person eligible under Part 89, 91, or 93 and proposes to provide dispatch service solely to itself, then the applicant need submit only the information required by FCC Form 400 or 425, except as otherwise indicated in this section, below.

(2) Where the applicant is a person proposing to provide dispatch service to eligibles under either Part 89, 91, or 93 of this chapter on a not-for-profit, cost-shared basis, he shall furnish:

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(i) A copy of the plan or agreement under which service will be offered. It must be in sufficient detail to show that such service will be provided at cost.

(ii) A statement of the purposes for which the system is to be used and the planned mode of operation.

(iii) The names and addresses of each person to participate in the sharing arrangement.

(iv) A statement showing that each participant is eligible to use the system for the purposes for which it is to be employed.

(3) Where the applicant is a person proposing to provide dispatch service to eligibles under either Part 89, 91, or 93 of this chapter on a commercial basis, he shall supply:

(i) A statement of the purposes for which the system is to be used and the planned mode of operation.

(ii) A statement certifying that no person not eligible to use the proposed facility for the purposes for which it is to be authorized will be offered or provided service over or through the licensee's system.

(iii) A copy of the basic agreement under which the dispatch service will be offered.

(4) Where the applicant is a person proposing to provide radiotelephone service to the public on a commercial basis, he shall furnish:

(i) A statement of the purposes for which the system is to be used and the planned mode of operation.

(ii) A copy of the basic agreement under which the radiotelephone service will be offered.

(5) Where the applicant proposes to provide service to other persons on a commercial basis, and where it has any interest of any kind whatsoever in any company engaged either in the sale or manufacture of radio equipment, in addition to the information required in this section, it shall accompany its application with:

(i) A full description of the applicant's interest in any such company or companies.

(ii) A list of any other radio station facility or facilities in which the applicant has any interest whatsoever.

(iii) The location and station designation of any facility identified in subparagraph (ii) of paragraph (a)(5) of this section.

(iv) Where the applicant has any interest whatsoever in any concern which provides radio communication services to persons other than itself, as to all such concerns, the applicant shall include in his filing the information required by subparagraphs (ii) and (iii) of paragraph (a)(5) of this section.

(b) All applicants for conventional systems shall specify the number of vehicle or portable units to be placed in operation upon grant of the authorization and the number of such units that will be placed in operation within 8 months of the date of grant.

(c) All applicants of trunked systems shall specify the number of mobile units to be placed in operation within the term of the license.

(d) Each applicant shall furnish a functional system diagram illustrating the inter-relationship of all stations

being applied for, together with technical details (including antenna height (AAT) and effective radiated power (ERP)), together with his proposed area of coverage and the signalling methods he will employ.

§ 89.703 Supplemental reports required of licensees authorized under this subpart.

(a) Licensees providing service to persons eligible either under Part 89, 91, or 93, on a not-for-profit, cost-shared basis, shall, prior to furnishing service to any user not previously identified, notify the Commission of its intention to do so, and furnish the Commission with sufficient information as to the prospective user to enable it to determine whether this person is eligible to participate in the sharing arrangement. Service to the participant may commence 30 days after such notification, unless the licensee is advised, in writing, of any deficiency in the licensee's showing or in the eligibility of the person to be served. In the latter case, until the deficiency is corrected or the user is shown to be qualified and eligible, he may not participate in the use of the system.

(b) Where a licensee provides service under the terms of an agreement, on a not-for-profit, cost-shared basis, such agreement may not be modified in any material respect until the changes in the terms and conditions are reported to, and approved by, the Commission.

(c) Where a licensee provides service on a commercial basis, he shall not modify, in any material respect, the basic agreement under which such service is provided until the changes in its terms and conditions are reported to, and approved by, the Commission.

(d) Licensees offering service on a commercial basis to any person or entity eligible under either Part 89, 91, or 93, or to the public, must report, annually and at the

time of filing applications for renewal of license, the number of mobile units being served; and such licensees shall, at that time, give the name and full address of each customer; the number of mobile units operated by each of them; and such other data as the party reporting may feel would be helpful in determining channel occupancy of the system, together with a certification that the terms of the basic agreement under which service is provided have not been modified or changed in any material respect. Such data shall be current as of the day and date falling 30 days prior to the date on which such licensees are required to file for renewal of their licenses, or, for the annual reports, at the close of the 12-month period covered by the annual report. The licensees of systems of the type covered by the provisions of this rule shall maintain records which, if referred to, will support any of the information required to be filed in the subject report. These records shall be available to the Commission upon request.

(e) Licensees furnishing service to eligible persons on a not-for-profit, cost-shared basis, shall, within 30 days of the close of the first full calendar year of operation, and each year thereafter, submit a report setting out the following information:

(1) A certification that during the period covered by the report, services have been offered and provided in accordance with the terms and conditions of the agreement approved by the Commission; that said agreement has not been modified or changed, except with the express approval of the Commission; and that records have been kept which show that service and facilities were made available on a not-for-profit, cost-shared basis. These records shall be available to the Commission upon request.

(2) A list of persons served during the period covered by the report.

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(3) The number of mobile units operated by each user and a statement showing whether these units are of the vehicular or portable type.

(4) The total number of units served by the system during the period of the report, together with the number served on January 1st and on December 31st of the year of the report; and the average number of such mobile units served during this period of time.

(f) Licensees of trunked systems serving only themselves shall report annually, and at the time of filing applications for renewal of licenses, the number of mobile units being served, together with such other data as the licensees may feel would be helpful to the Commission in determining channel occupancy of their systems. Records supporting the information required in these reports shall be maintained by the licensees and shall be available to the Commission upon request.

(g) All licensees of conventional systems, in addition to the other requirements of this section, shall report the number of vehicular and portable units placed in operation within 8 months of the date of the grant of his license. Such reports shall be filed within 30 days from that date.

(h) All licensees of trunked systems shall report the date on which construction of the authorized facility began; that part of the facility completed; and the schedule for completion of construction of any part of the system not yet finished.

§ 89.704 Processing of applications.

(a) Applications for facilities to operate in the 806-821 MHz and 851-866 MHz bands will be processed as follows:

(1) All applications will first be considered to determine whether they are substantially complete and acceptable for filing. If so, they will be assigned a file number and put in pending status. If not, they will be returned to the applicant.

(2) All applications in pending status will be processed in the order in which they are received. The order in which they are received will be determined by the time and date on which the original proposal was filed with the Commission.

(3) Each application will then be reviewed to determine whether it can be granted. Should it be granted, frequencies or channels will be assigned by the Commission in accordance with its assignment policies and loading criteria.

(4) Where, upon examination, it is determined that the proposal must be dismissed, that application will be returned; and the priority accorded it will no longer obtain.

(5) Where, upon examination, it is determined that the proposal cannot be granted or dismissed; but that it must be designated for hearing, such action will be taken. In this event, the applicant will not lose the priority accorded it and frequencies will be set aside for use in the proposed system in the event of ultimate favorable action by the Commission on the application. Should the proposal be denied, the frequencies reserved will become immediately available for assignment to other persons; and this will be so regardless of whether or not appeal by any party to the proceeding is made to the courts; *Provided, however,* the grant will not become effective for a period of thirty days to allow any interested party to request a stay of the action the Commission plans to take.

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Policies Governing the Selection and Assignment of Frequencies for Use in the 806-821 MHz and 851-866 MHz Bands

§ 89.751 Selection and assignment of frequencies.

(a) The Commission will select and assign frequencies for operation in the 806-821 MHz and 851-866 MHz bands.

(1) For trunked systems, the assignment of frequencies will be made, in accordance with applicable loading criteria, in minimum groups of five and in maximum groups of twenty channel pairs. All mobile and control station frequencies will be chosen from those allocated in the 806-821 MHz band. Mobile station transmitting frequencies will commence with Channel No. 1 at 820.9875 MHz, followed by Channel No. 2 at 820.9625 MHz, and proceed to the band end with uniform 25-kHz channeling; and base station transmitting frequencies will be selected by the Commission and assigned from those allocated in the 851-866 MHz band, commencing with Channel No. 1 at 865.9875 MHz, followed by Channel No. 2 at 865.9625 MHz, and proceed to the band end with uniform 25-kHz channeling. The spacing between associated mobile and base station frequencies shall be, uniformly, 45 MHz.

(2) For conventional systems, the assignment of frequencies will be made in accordance with applicable loading criteria. Accordingly, depending upon the number of mobile units to be served, the applicant may either be required to share a channel, or, if the applicant shows a sufficient number of mobile units to warrant the assignment of one or more channels for its exclusive use, he may be licensed to use such channel or channels on an exclusive basis in his area of operation.

(3) For conventional systems, mobile station transmitting frequencies, as well as those for use by control stations, will be selected from those allocated in the 806-821 MHz band. Mobile and control station transmitting frequencies will commence with Channel No. 1 at 806.0125 MHz, followed by Channel No. 2 at 806.0375 MHz, and proceed to the band end with uniform 25-kHz channeling. Base station transmitting frequencies will be selected and assigned from those allocated in the 851-866 MHz band, with Channel No. 1 commencing at 851.0125 MHz, followed by Channel No. 2 at 851.0375 MHz, and proceed to the band end with uniform 25-kHz channeling. The spacing between associated mobile and base station frequencies shall be, uniformly, 45 MHz.

(b) Stations authorized by the Commission to operate in the 806-821 MHz and 851-866 MHz band will be afforded protection solely on the basis of the mileage separation criteria set out below. Only co-channel interference between base station operations will be taken into consideration. Adjacent channel and other types of possible interference will not be taken into account.

(1) For trunked systems, the separation between co-channel systems shall be 70 miles.

(2) For urban-conventional systems, the separation between co-channel base stations shall be 70 miles; provided, however, where the transmitter site of a previously authorized, co-channel facility is located at any point within 15 miles from the geographic center of any one of the 50 Urbanized Areas listed in Table 1, at paragraph (g) of this section, then the distance between the transmitter site of the proposed co-channel conventional system and the geographic center of the urbanized area involved shall be a minimum of 85 miles.

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(3) For suburban-conventional systems, the separation between co-channel base stations shall be 45 miles; *Provided, however,* for all proposals for facilities specifying a transmitter site within 25 miles of the site of an existing suburban-conventional station, or within 25 miles of the site specified in a prior filed application for such station, the separation shall be 70 miles.

(c) Notwithstanding the provisions of paragraph (b)(2) of this section, where an assigned channel of an urban-conventional system is not fully loaded in accordance with applicable loading criteria, and where the transmitter site of that system is located within 15 miles from the center of the urbanized area involved, the Commission may issue additional authorizations for facilities to be located within 15 miles of the center of that urbanized area until the channel in question is occupied in conformity with applicable loading criteria.

(d) Notwithstanding the provisions of paragraph (b)(3) of this section, where an assigned channel of a suburban-conventional system is not fully loaded in accordance with applicable loading criteria, the Commission may issue additional authorizations for facilities to be located within 25 miles of the transmitter site of the first station authorized until the channel in question is occupied in conformity with applicable loading criteria.

(e) UHF television translator stations using UHF output channels from Channel 70 through Channel 83, shall operate on a secondary basis to land mobile stations using the UHF bands allocated under this subpart for land mobile use, and, accordingly, such television translator stations will not be protected from interference from such authorized land mobile stations.

(f) Pending further negotiations with Canada and Mexico, land mobile stations operating in the 806-890 MHz band shall do so on a secondary basis to any Canadian or Mexican television station placed in operation on television channels in this band.

(g) *Table 1, Urbanized Areas.*

Urbanized Area	Geographic Center	
	N. Latitude	W. Longitude
Akron, Ohio	41° 05′ 00″	81° 30′ 44″
Albany-Schenectady-Troy, N.Y.	42° 39′ 01″	73° 45′ 01″
Atlanta, Georgia	33° 45′ 10″	84° 23′ 37″
Baltimore, Maryland	39° 17′ 26″	76° 36′ 45″
Birmingham, Alabama	33° 31′ 01″	86° 48′ 36″
Boston, Massachusetts	42° 21′ 24″	71° 03′ 24″
Buffalo, New York	29° 45′ 26″	95° 21′ 37″
Chicago, Illinois	41° 52′ 28″	87° 38′ 22″
Cincinnati, Ohio	39° 06′ 07″	84° 30′ 35″
Cleveland, Ohio	41° 29′ 51″	81° 41′ 50″
Columbus, Ohio	39° 57′ 47″	83° 00′ 17″
Dallas, Texas	32° 47′ 09″	96° 47′ 37″
Dayton, Ohio	39° 45′ 32″	84° 11′ 43″

Denver, Colorado	39° 44′ 58″	104° 59′ 22″
Detroit, Michigan	42° 19′ 48″	83° 02′ 57″
Ft. Lauderdale-Hollywood, Florida	26° 07′ 30″	80° 09′ 00″
Ft. Worth, Texas	32° 44′ 55″	97° 19′ 44″
Houston, Texas	29° 45′ 26″	95° 21′ 37″
Indianapolis, Indiana	39° 46′ 07″	86° 09′ 46″
Jacksonville, Florida	30° 19′ 44″	81° 39′ 42″
Kansas City, Missouri, Kansas	39° 04′ 56″	94° 35′ 20″
Los Angeles, California	34° 03′ 15″	118° 14′ 28″
Louisville, Kentucky, Indiana	38° 14′ 47″	85° 45′ 49″
Miami, Florida	25° 46′ 37″	80° 11′ 32″
Memphis, Tennessee, Mississippi	35° 08′ 46″	90° 03′ 13″
Milwaukee, Wisconsin	43° 02′ 19″	87° 54′ 15″
Minneapolis-St. Paul, Minnesota	44° 58′ 57″	93° 15′ 43″
New Orleans, Louisiana	29° 56′ 53″	90° 04′ 10″
New York-Northeastern New Jersey	40° 45′ 06″	73° 59′ 39″
Norfolk-Portsmouth, Virginia	36° 51′ 10″	76° 17′ 21″
Oklahoma City, Oklahoma	35° 28′ 26″	97° 31′ 04″
Omaha, Nebraska-Iowa	41° 15′ 42″	95° 56′ 14″
Philadelphia, Pa., New Jersey	39° 56′ 58″	75° 09′ 21″
Phoenix, Arizona	33° 27′ 12″	112° 04′ 28″
Pittsburgh, Pennsylvania	40° 26′ 19″	80° 00′ 00″
Portland, Oregon, Washington	45° 31′ 06″	122° 40′ 35″

Providence-Pawtucket-Warwick, Rhode Island, Massachusetts	41° 49′ 32″	71° 24′ 41″
Rochester, New York	43° 09′ 41″	77° 36′ 21″
Sacramento, California	38° 34′ 57″	121° 29′ 41″
St. Louis, Missouri, Illinois	38° 37′ 45″	90° 12′ 22″
St. Petersburg, Florida	27° 46′ 18″	82° 38′ 19″
San Antonio, Texas	29° 25′ 37″	98° 29′ 06″
San Bernardino-Riverside, California	34° 06′ 30″	117° 17′ 28″
San Diego, California	32° 42′ 53″	117° 09′ 21″
San Francisco-Oakland, California	37° 46′ 39″	122° 24′ 40″
San Jose, California	37° 20′ 16″	121° 53′ 24″
Seattle, Washington	47° 36′ 32″	122° 20′ 12″
Springfield-Chicopee-Holyoke, Massachusetts, Connecticut	42° 06′ 21″	72° 35′ 32″
Toledo, Ohio-Michigan	41° 39′ 14″	83° 32′ 39″
Washington, D.C.-Maryland-Virginia	38° 53′ 51″	77° 00′ 33″

Channel Loading Requirements for Trunked and Conventional Systems

§ 89.801 Trunked systems.

(a) Trunked systems of communication will be authorized on the basis of the loading criteria set out in this section.

(b) Table 1, loading requirements for trunked systems.

Service Group [1]	Vehicular Radio Units [2]		
	5-Channel Systems	10-Channel Systems	20-Channel Systems
Police and Fire Group	300	750	1500
Business Radio Group	500	1000	2000
Motor Carrier Group (urban and interurban passenger carriers only)	800	1600	2500
Other Services Group	400	800	1600
Mixed Service Group	500	1000	2000
Radiotelephone Group	200	400	800

Note 1. No provision is made for use of trunked systems by persons eligible in the Taxicab Radio Service, since this mode of communication is not compatible with normal transmission requirements of taxicab companies.

Note 2. For loading trunked systems of communication, no distinction is made between vehicular and portable mobile units.

(c) Each applicant for trunked facilities shall certify that a minimum of 70 percent of the mobile units specified in its application will be placed in operation not later than the date on which the term of his license for the system expires.

(d) Any licensee, at any time its authorized trunked system is occupied to 90 percent of its specified capacity, may apply for additional channels. Assignments will

be made based, first, upon the availability of frequencies for use by the licensee; and, second, based upon the showing made by the licensee of the requirements for additional channel pairs.

(e) Licensees of trunked facilities must commence construction within six months from the date of grant and complete construction within one year or such further time as the Commission may allow.

§ 89.802 Conventional systems.

(a) Conventional systems of communication will be authorized on the basis of the loading criteria set out in this section.

(b) Table 1, Loading requirements for conventional systems.

Service Group	Channel Loading—Units per Channel Vehicular/Portable		
	Single Licensee	2-5 Licensees	Over 5 Licensees
Police and Fire Group[1]	50/100	40/80	30/60
Business Radio Group	90/180	70/140	50/100
Taxicab Radio Group[2]	150	125	100
Motor Carrier Radio Group (urban and inter-urban passenger motor carriers, only)	150/300	125/250	100/200
Other Services Group	70/140	50/100	40/60
Mixed Service Group		70/140	50/100

Note 1. Full sharing of channels allocated in the 806-821 and 851-866 MHz bands is permissible; and where the eligibles in one service share facilities in common with persons eligible in one of the other radio services, i.e., where channels are jointly used on this basis, then the loading criteria shall be 70/140 or 50/100 mobile and portable units per channel.

Note 2. No loading criteria for portable units in the Taxicab Radio Group are given, since the requirement for units of this type has not been established in that service.

(c) Every applicant for a conventional system of communication shall certify that a minimum of 70 percent of the mobile units specified in its application will be placed in operation not later than 8 months after the date of grant of his license for the system.

(b) Where licensees, authorized under the provisions of paragraph (c) of this section, do not load the channel or channels assigned in accordance with specified loading criteria, any (assigned channel) not so occupied shall be available for assignment to other applicants. All authorizations for conventional systems are issued subject to this condition.

(e) Any licensee, at any time its authorized conventional system is occupied to 90 percent of its specified capacity, may apply for additional channel pairs. Assignments will be made based, first, upon the availability of frequencies for use by the licensee, and, second, based upon the showing made by the licensee of its requirements for additional channel pairs.

§ 89.803 Other criteria to be applied in assigning channels for use in conventional systems of communication.

(a) In every case, the Commission will examine a proposal to determine the requirements of the applicant in terms of the number of mobile units to be served, together with the nature of the activities the applicant is engaged in. Where the applicant shows that the channel will be loaded to 70 percent of its assigned capacity, then that channel will be made available to that applicant for its exclusive use in the area in which he proposes to operate. Where the showing made justifies the assignment of more than one channel to the applicant, then additional frequencies will be made available for his use.

(b) Where a commercial concern proposes to furnish service to either eligibles under either Part 89, 91, or 93, or to the public, using a conventional system of communication, its application will be considered on the same basis as that of an applicant for private or shared communication facilities.

(c) In loading channels, the Commission will further consider the mode of operation planned; the purposes for which the system is to be used, as noted; the persons to be served by the station and other factors. The other factors shall include the following:

(1) Mobile relay or repeater operations will not be assigned on channels to be used in two-frequency simplex mode, and conversely.

(2) Systems employing full duplex mode of operation will not be licensed on frequencies assigned for mobile relay or two-frequency simplex systems.

(3) Applicants in one service group, where possible, will not be required to share with applicants in other service groups, where the loading criteria of the services involved are different, except where circumstances require it.

(4) Push-to-talk operations will not be licensed on channels which are to be used under other modes of operation, except in those cases where it is shown that such method of operations is feasible.

(d) Conventional systems will not be authorized for radiotelephone operations.

(e) The Commission, in addition to the foregoing standards, set out at paragraph (c) of this section, may take into consideration any other factor which might enable the persons licensed to use a given channel or channels in more efficient and effective ways.

(f) No applicant shall be required to obtain any approval from a state or local regulatory authority to operate facilities authorized pursuant to these rules. State or local regulation may be exercised only to the extent that it does not limit competition or otherwise conflict with these rules. There shall be no limit on the number of systems authorized to operate in any one given area except that imposed by allocation limitations; and no person authorized to operate any radio facility under the provisions of this subpart shall have a right to protest proposals on grounds other than violation of or inconsistency with the provisions of this subpart. All grants are made subject to this condition and to the other conditions and standards set out in this subpart.

§ 89.804 Other criterion to be applied in licensing channels for use in trunked systems of communication.

There shall be no limit on the number of trunked systems authorized to operate in any one given area except that imposed by allocation limitations; and no person authorized to operate any trunked radio facility shall have a right to protest any other proposal on grounds other than violation of an inconsistency with the provisions of this subpart. All grants are made subject to the conditions and standards set out in this subpart.

PART 91—INDUSTRIAL RADIO SERVICES

8. In § 91.102(a), the table is amended to read as follows:

§ 91.102 Frequency stability.

(a) • • •

Frequency Range	Transmitter (input) Power			
	Fixed and Base Stations		Mobile Stations	
	Over 300 watts	300 watts or less	Over 3 watts	3 watts or less
MHz	Percent	Percent	Percent	Percent
Below 25 (1)	0.005	0.01	0.01	0.02
25 to 50	.002	.002	.002	.005
50 to 450	(2) .0005	.0005	.0005	.005
450 to 470	(3, 5) .00025	(3, 5) .00025	.0005	(3) .0005
470 to 512	.00025	.00025	.0005	.0005
806 to 821	.00015	.00015	.00025	.00025
851 to 866	.00015	.00015	.00025	.00025
950 to 1427	(4)	(4)	(4)	(4)
1427 to 1435	(6) .03	(6) .03	.03	.03
Above 1435	(4)	(4)	(4)	(4)

• • • • • • • • • • •

9. In § 91.103, paragraph (a) is amended and paragraph (c) is added to read as follows:

§ 91.103 Types of emission.

(a) Except as provided in paragraph (b) and (c) of this section, stations in these services will be authorized to use only A3 or F3 emission for radiotelephony. The authorization to use A3 or F3 emission will be construed to include the use of tone signals or signalling devices whose sole function is to establish or maintain communication between stations.

• • • • • • • • • • •

(c) Operation in the frequency bands 806 to 821 and 851 to 866 MHz is limited to F3 emission.

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10. In § 91.104(b)(2), the table is amended to read as follows:

§ 91.104 Emission limitations

• • • • • • • • • • •

(b) • • •

(2) • • •

Frequency Band (MHz)	Authorized Bandwidth (kHz)	Frequency Deviation (kHz)
25 to 50	20	5
50 to 150	(1) 20	(1) 5
150 to 450	20	5
450 to 470	(2) 20	(3) 5
470 to 512	20	5
806 to 821	20	5
851 to 866	20	5

• • • • • • • • • • •

11. In § 91.105, Paragraphs (f) and (h) are amended to read as follows:

§ 91.105 Modulation requirements

• • • • • • • • • • •

(f) Each transmitter which is operated on a frequency in the bands 450 to 512, 806 to 821, and 851 to 866 MHz and which is provided with a modulation limiter in accordance with the provisions of paragraph (c) of this section shall also be equipped with an audio low-pass filter in accordance with the provisions of paragraph (g) or (h) of this section.

• • • • • • • • • • •

(h) For stations authorized in the 450-470 MHz band on or after November 1, 1967, and for all stations authorized in the 470 to 512, 806 to 821, and 851 to 866 MHz bands, the audio low-pass filter required by provisions of the preceding paragraphs of this section

shall be installed between the modulation limiter and the modulated stage and, at audio frequencies between 3 kHz and 20 kHz, shall have an attenuation greater than the attenuation at 1 kHz by at least:

$$60 \log_{10} (f/3) \text{ decibels}$$

where "f" is the audio frequency in kHz. At audio frequencies above 20 kHz, the attenuation shall be at least 50 decibels greater than the attenuation at 1 kHz.

• • • • • • • • • • •

12. In § 91.106(b), the table is amended to read as follows:

§ 91.106 Power and antenna height.

• • • • • • • • • • •

(b) • • •

Frequency Range (MHz)	Maximum plate power input to the final radio freq. stage (watts)	Maximum effective radiated power (watts)
1.6 to 6	2000	
25 to 100	500	
100 to 216	600	
216 to 220	(1)	(1)
220 to 470	600	
470 to 512		1000
806 to 821		(2)
851 to 866	(3)	(2)
Above 950	(1)	(1)

1. To be specified in the station authorization.

2. For Power limitations see Section 89.651.

3. The output power of a transmitter on any authorized frequency in this service shall not exceed 250 watts (24 dBw).

• • • • • • • • • • •

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13. A new Section 91.116 is added to read as follows:

§ 91.116 Frequencies in 806 to 821, 851 to 866 MHz bands.

For criteria governing the use of frequencies in the 806 to 821 and 851 to 866 MHz bands see Part 89, Subpart S.

PART 93—LAND TRANSPORTATION RADIO SERVICES

14. In § 93.102(a), the table is amended to read as follows:

§ 93.102 Frequency stability.

(a) • • •

Frequency Range MHz	All Fixed and Base Stations	All Mobile Stations	
		Over 3 watts	3 watts or less
	Percent	Percent	Percent
Below 25	.01	.01	.02
25 to 50	.002	.002	.005
50 to 450	(1) .0005	.0005	.005
450 to 470	(2,4) .00025	.0005	(2) .0005
470 to 512	.00025	.0005	.0005
806 to 821	.00015	.00025	.00025
851 to 866	.00015	.00025	.00025
950 to 1427	(3)	(3)	(3)
1427 to 1435	(5) .03	.03	.03
Above 1435	(3)	(3)	(3)

• • • • • • • • • •

15. In § 93.103, paragraph (a) is amended and paragraph (c) is added to read as follows:

§ 93.103 Types of emission.

(a) Except as provided in paragraphs (b) and (c) of this section, stations in these services will be authorized to use only A3 or F3 emission for radiotelephony. The authorization to use A3 or F3 emission will be construed to include the use of tone signals or signalling

devices whose sole function is to establish and maintain communication between stations.

• • • • • • • • • • •

(c) Operation in the frequency bands 806 to 821 and 851 to 866 MHz is limited to F3 emission.

16. In § 93.104(b)(2), the table is amended to read as follows:

§ 93.104 Emission limitations.

• • • • • • • • • • •

(b) • • •

(2) • • •

Frequency Band (MHz)	Authorized Bandwidth (kHz)	Frequency Deviation (kHz)
25 to 50	20	5
50 to 150	(1) 20	(1) 5
150 to 450	20	5
470 to 512	(2) 20	(3) 5
806 to 821	20	5
851 to 866	20	5
Above 866	(4)	(4)

• • • • • • • • • • •

17. In § 93.105, paragraphs (f) and (h) are amended to read as follows:

• • • • • • • • • • •

§ 93.105 Modulation requirements.

• • • • • • • • • • •

(f) Each transmitter which is operated on a frequency in the bands 450 to 512, 806 to 821, and 851 to 866 MHz and which is provided with a modulation limiter in accordance with the provisions of paragraph (e) of this section shall also be equipped with an audio low-pass filter in accordance with the provisions of paragraph (g) or (h) of this section.

• • • • • • • • • • •

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(h) For stations authorized in the 450-470 MHz band on or after November 1, 1967, and for all stations authorized in the 470-512, 806 to 821, and 851 to 866 MHz bands, the audio low-pass filter required by the provisions of the preceding paragraph of this section shall be installed between the modulation limiter and the modulated stage and, at audio frequencies between 3 kHz and 20 kHz, shall have an attenuation greater than the attenuation of 1 kHz at least:

$$60 \log_{10} (f/3) \text{ decibels}$$

Where "f" is the audio frequency in kHz. At audio frequencies above 20 kHz, the attenuation shall be at least 50 decibels greater than the attenuation at 1 kHz.

* * * * * * * * * * *

18. In § 93.106(b), the table is amended to read as follows:

§ 93.106 Power and antenna height.

* * * * * * * * * * *

(b) * * *

Frequency Range (MHz)	Maximum plate power input to the final radio freq. stage (watts)	Maximum effective radiated power (watts)
30 to 100	500	
100 to 470	(1) 120	
470 to 512		1000
806 to 821		(4)
851 to 866	(5)	(4)
Above 950	(3)	

1. In the frequency band 450-470 MHz maximum plate power input in excess of 120 watts but not in excess of 600 watts may be authorized in accordance with the provision of Subpart E of this part, upon submission of the required showings.
2. [Reserved].
3. As specified in § 93.111.
4. For power limitations see Section 89.651.
5. The output power of a transmitter on any authorized frequency in this service shall not exceed 250 watts (24 dBw).

* * * * * * * * * * *

19. A new Section 93.116 is added to read as follows:

§ 93.116 Frequencies in the 806 to 821 and 851 to 866 MHz bands.

For criteria governing the use of frequencies in the 806 to 821 and 851 to 866 MHz bands see Part 89, Subpart S.

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APPENDIX C

Guidelines Under Which Developmental Authorizations for Cellular Systems in the 806-947 MHz Frequency Bands Will Be Issued

I. Eligibility

Developmental authorizations for cellular systems in the 806-947 MHz frequency band will be issued only to existing and proposed wireline communication common carriers who are legally, financially and otherwise qualified to conduct experimentation for the development of engineering, operational data and techniques directly related to the establishment of a high capacity mobile telephone system which is based upon a cellular concept and regulated under Part 21 of the Commission's Rules.

II. Scope of Service

Developmental authorizations will be issued for development of a high capacity mobile telephone system, including provisions for mobile telephone and automatic dispatch service to be governed by Part 21 of the Rules and Regulations.

III. Adherence to Program of Research and Development

The program of research and development, as stated by an applicant in the application for construction permit or license or stated in the instrument of station authorization, shall be substantially adhered to unless the licensee is otherwise authorized by the Commission.

IV. Terms of Grant: General Limitations

a. Developmental authorizations shall normally be issued for one year or longer as the Commission may deem appropriate in any particular case, and shall be subject to cancellation without a hearing by the Commission at any time upon notice to the licensee.

b. Where some phases of the developmental program are not covered by the General Rules of the Commission or by Part 21 of the Rules, the Commission may specify supplemental or additional requirements or conditions in each case as it may deem necessary in the public interest, convenience or necessity.

c. Frequencies allocated to the service toward which such development is directed will be assigned for developmental operation on a one system per market area basis.

d. Only one developmental system will be authorized any single applicant.

e. No interference shall be caused to the regular services of stations operating in accordance with the Commission's Table of Frequency Allocations (2.106 of the Rules and Regulations).

f. All systems shall be designed for nationwide compatability for roamer operation.

g. The rendition of communication service for hire is not permitted unless specifically authorized by the Commission.

h. The grant of a developmental authorization carries with it no assurance that the developmental program, if successful, will be authorized on a permanent basis.

V. Supplementary Showing Required

a. Authorizations for development of a cellular system will be issued only upon a showing that the applicant has a definite program of research and development, the details of which shall be set forth, having reasonable promise of substantial contribution to these services within the term of such authorization. In addition to showing that the applicant is financially qualified or that adequate provision has been made to underwrite the costs of the proposed venture, a specific showing should be made as to

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the factors which the applicant believes qualify him technically to conduct the research and development program, including a description of the nature and extent of engineering facilities which applicant has available for such purpose.

b. Expiring developmental authorizations may be renewed only upon the applicant's compliance with the objectives of the authorization sought to be renewed and upon a factual showing that further progress in the program of research and development requires further radio transmission and that the public interest, convenience or necessity would be served by renewal of such authorization.

VI. Developmental Report Required

a. Upon completion of the program of research and development, or, in any event, upon the expiration of the instrument of station authorization under which such investigations were permitted, or at such times during the term of the station authorization as the Commission may deem necessary to evaluate the progress of the developmental program, the licensee shall submit, in duplicate, a comprehensive report on the following items, in the order designated:

1. Report on the various phases of the project which were investigated.

2. Total number of hours of operation on the frequencies assigned.

3. Copies of any publication on the project.

4. A listing of any patents applied for, including copies of any patents issued as a consequence of the activities carried forth under the authorization.

5. Detailed analysis of the result obtained.

6. Any other pertinent information.

b. In addition to the information required by paragraph (a) of this section, the developmental report of a station authorized for the development of a proposed radio service shall include comprehensive information on the following items:

1. Probable public support and methods of its determination.

2. Practicability of service operations.

3. Interference encountered.

4. Pertinent information relative to merits of the proposed service.

5. Propagation characteristics of frequencies used, particularly with respect to the service objective.

6. Frequencies, if any, believed to be more suitable and reasons therefore.

7. Type of signals or communications employed in the experimental work.

c. Normally, developmental reports will be made a part of the Commission's public records. However, an applicant may request that the Commission withhold from the public certain reports and associated material relative to the accomplishments achieved under developmental authorization, and, if it appears that such information should be withheld, the Commission will so direct.

APPENDIX C

FCC 75-324
30779

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

Docket No. 18262

In the Matter of

An Inquiry Relative to the Future Use of the Frequency Band 806-960 MHz; and

Amendment of Parts 2, 18, 21, 73, 74, 89, 91, and 93 of the Rules Relative to Operations in the Land Mobile Service Between 809-960 MHz.

Memorandum Opinion and Order

(Proceeding Terminated)

Adopted: March 19, 1975

Released: March 20, 1975

By the Commission:

I.

Preliminary Statement

1. We have before us the petitions for reconsideration and for associated relief filed in this proceeding.[1] These pleadings are directed to the action taken by us in our

[1] The petitions for reconsideration and those for associated relief are listed at Appendix A. In addition to the petitions for reconsideration, requests for associated relief have been made. These are, specifically, the "Petition for Stay and Suggestion for Suspension of Effective Date," filed June 17, 1974, by the National Association of Radiotelephone Systems; the "Petition to Intervene," filed by General Communications Engineering, Inc., on November 7, 1974; and the "Motion for Leave to File Additional Pleading," and the "Supplement to Petition for Stay: Motion to Set Aside Previous

Second Report and Order.[2]

2. In our *Second Report and Order* we allocated a total of 40 MHz of radio spectrum (825-845 MHz and 870-890 MHz) to the development of a nation-wide, broadband, "cellular" mobile radio communication system. These facilities were to serve the future needs of the public for mobile radio-telephone service. For the reasons given in the *Second Report and Order,* it was decided to license only wire line telephone companies to construct and operate such cellular systems. In addition, we allocated 30 MHz of radio spectrum (806-821 MHz and 851-866 MHz) for the development of "trunked" and "conventional" radio systems[3] to serve the mobile radio communication requirements of the specialized radio services governed by Parts 89, 91 and 93 of our Rules.[4]

Order; and Motion to Reopen Proceeding and to Hold Evidentiary Hearing Before Full Commission," submitted November 29, 1974, by the National Association of Radiotelephone Systems. We will consider and dispose of these pleadings in this opinion.

[2] *Land Mobile Radio Service, Second Report and Order,* Docket 18262, 46 FCC 2d 752 (1974).

[3] In simplest terms, a "trunked" radio system is a radio communication facility employing between five and twenty channel pairs. Channel access by any user at any time is controlled by a computer which assigns that user the first available channel or places the "call" in a waiting line until a circuit becomes available. A "conventional" facility is a radio communication system employing a maximum of five channel pairs. Automatic "trunking" techniques may be used but are not required. "Conventional" radio communication facilities are characteristic of land mobile systems presently authorized in the Public Safety, Industrial, and Land Transportation Radio Services.

[4] The land mobile services governed by Parts 89, 91 and 93 are known, respectively, as the Public Safety, Industrial and Land Transportation Radio Services. These services are part of a larger group of services collectively known as the Safety and Special Radio Services. The Part 89 Public Safety Radio Services include:

As an interim measure, we planned to authorize "trunked" systems to provide mobile radiotelephone service to eligibles in these services as well as to the public. Further, we held 45 MHz in reserve for future needs; and we also adopted new technical, operational, and regulatory approaches designed to develop the new radio spectrum more effectively and efficiently.

3. The petitions for reconsideration have raised a number of issues; and we have carefully reconsidered our decision in the light of the arguments presented; and we have modified it in certain respects. However, for the reasons given in this opinion, we have decided to affirm the basic approach we followed in our *Second Report and Order.*

II.

Summary of Modifications to Second Report and Order

4. Although we have retained the original allocation of 40 MHz for the development of cellular systems, we have modified the plan to permit licensing of other than wire line carriers to develop and operate cellular systems. (See Part IV, paragraph 24 *et seq., infra.*)

5. As we have mentioned, our original plan included an interim provision for licensing "trunked" systems to provide radiotelephone service for the use of eligibles and others. On reconsideration, we have concluded that this provision is not necessary to our objectives in allo-

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The Local Government, Police, Fire, Highway Maintenance, Forestry-Conservation, Special Emergency, and State Guard Radio Services. In the Part 91 Industrial Radio Services, there are the: Power, Petroleum, Forest Products, Motion Picture, Relay Press, Special Industrial, Business, Manufacturers, and Telephone Maintenance Radio Services. And the Part 93 Land Transportation Radio Services include the: Motor Carrier, Railroad, Taxicab, and Automobile Emergency Radio Services.

cating the 30 MHz of spectrum to the Public Safety, Industrial and Land Transportation Radio Services. We are now persuaded that these interim requirements for radiotelephone service can be better met by a simplified "cell" system which would form the nucleus of the more complex "cellular" facilities we have provided for. Such needs can also be met on frequencies which have been allocated previously, particularly frequencies in the 470-512 MHz band which have been made available to the "miscellaneous common carriers"—the radio common carriers (RCC's).[5] Outside the major markets, other bands can be used.[6] Thus, this feature of our plan is not essential to or compatible with our primary objectives, and, accordingly, we have eliminated it. At the same time the rule requiring wire line telephone companies to provide interconnection becomes unnecessary; and it has been dropped. Should it develop in the future that radiotelephone requirements are not being satisfied either by our "cellular" program or through systems operating on frequencies in the lower bands, the matter will be revisited and appropriate steps will be taken to meet the needs of the public for their type of service. There are, of course, frequencies in the 900-MHz reserve pool.

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[5] *Land Mobile-UHF TV Channel Sharing, Second Report and Order*, Docket 18261, 30 FCC 2d 221 (1971). As none of these channels have been assigned, they are still available for this purpose.

[6] The 470-512 MHz band frequencies are available in the following Urbanized Areas: Boston, Massachusetts; Chicago, Illinois; Dallas-Fort Worth, Texas; Houston, Texas; Los Angeles, California; Miami, Florida; New York-Northwestern New Jersey; Philadelphia, Pennsylvania; Pittsburgh, Pennsylvania; San Francisco-Oakland, California; and Washington, D. C. Frequencies in the 470-512 MHz band were made available in Dallas-Fort Worth and Houston, Texas, and Miami, Florida in our *Fifth Report and Order* in Docket No. 18261, *Land Mobile UHF-TV Sharing Plan*, 48 FCC 2d 360 (1974).

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6. There is, we recognize, some tension between the goals of promoting competitive considerations on the one hand and taking full advantage of accumulated corporate expertise on the other. Authorizing radio equipment manufacturers to operate as many as five "trunked" systems might have an adverse effect on the competition. But at the same time it is undeniable that the manufacturers have the expertise, incentives, and the resources available at the present time to go forward with "trunked" systems at 900 MHz. These systems are indispensable to the full development of communications at 900 MHz. To strike a balance between these two considerations, it has been decided to allow land mobile radio equipment manufacturers [7] an opportunity to establish and operate a model "trunked" system in order to allow them to demonstrate whether such facilities make economic and engineering sense at 900 MHz, and if so, for what applications. If, in the future, it should be made to appear to our satisfaction that the limitation of one 20-channel "trunked" system nation-wide has an adverse impact on the development of such facilities, we will at that time consider what further action the public interest requires.[8]

7. It has also been suggested that some limits be placed on the number of "trunked" systems that we will license to other entrepreneurs in order to preserve the competition at 900 MHz. We have no evidence before us suggesting that domination of this field by licensees with an unfair competitive advantage over their economic rivals is at all probable. However, we plan closely

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[7] The term "manufacturer" refers to businesses engaged in the manufacture of radio frequency ("RF") equipment designed for use in land mobile communication systems.

[8] We expressed a similar concern and an intention to review this matter in the *Second Report and Order*, Docket No. 18262, supra, *fn.* 2, at p. 781.

to supervise the development of "trunked" systems; should it appear that anti-competitive behavior by any entrant in this field seriously compromises our policies, we will take whatever corrective action seems warranted.

8. We are adopting the suggestion of a number of the petitioners that in order to maintain more effective control over the use of specialized mobile radio systems (SMR systems)[9] the Commission ought separately to license the mobile and control stations (or control points) operated by eligible users. It is compatible with the basic philosophy governing the Public Safety, Industrial, and Land Transportation Radio Services. Therefore, we will modify our procedures to accomplish this.

9. These are the major changes we have made in our *Second Report and Order*. Other changes are dealt with in the opinion which follows.

III.

Allocation Matters

10. Petitions for Reconsideration filed by the American Telephone and Telegraph Company (AT&T) and by Motorola, Inc. (Motorola) are directed to the amount of radio spectrum we have allocated for use by "cellular"

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[9] The SMR systems are those to be licensed under the provisions of Section 89.604(c) of our Rules. These stations have been variously referred to as "multi-user systems," "multiple user systems," and "common user systems." It appears that, because of this profusion of names, there exists some confusion concerning the definition of the SMR category. To clarify: under this category we will license base station facilities and make their use available (under certain restrictions and limitations) to persons eligible in the Public Safety, Industrial and Land Transportation Radio Services. The SMR system licensee may, in turn, make these facilities available to either an eligible individual or to a number of eligible individuals in one or more of the service groupings set out at Sections 89.801 and 89.802 of the Rules.

systems. AT&T urged that the amount be increased from 40 MHz to 64 MHz, the original amount proposed by AT&T. Motorola's petition is primarily directed to the methods we should use in making the 40 MHz of spectrum available for use in cellular systems. We have considered these petitions, but we find nothing in them which requires or warrants modification of our decision in this matter.

11. AT&T claims that it has developed certain "attractive" design changes, including the possibility of shared use of the electronic switching offices by both the "mobile" and the "wire line" services, but that if these changes are implemented, the cost of the "cellular" system would be more "spectrum sensitive" than in its original design. In other words, by reducing the amount of spectrum from 64 MHz to 40 MHz, the increase in the costs of the base station facilities would not be 20 percent, as originally estimated, but 50 percent, if the planned design changes are made.

12. We have reviewed AT&T's petition in the light of all of the information previously submitted in the long course of this proceeding and in the light of what we conceive, after many years of study, to be the best overall plan for the development of the entire 900 MHz allocation, and we find its submissions unpersuasive. Nothing in AT&T's current pleadings tend to undermine the balance between new service offerings and spectrum management and conservation struck in the *Second Report and Order*. Furthermore, AT&T has not adequately supported its assertions concerning systems changes which, although not without attractive features, would occupy more spectrum. For example, no information has been supplied on how the new cost figures were arrived at, *on* the comparative costs of the original and of the new design of the system, or on the technical or overall economic advantages of each system design. We cannot prop-

erly contemplate a substantial change in our allocation plan, worked out over a four-year period, on the basis of such unsupported statements. Accordingly, its request will be denied.

13. Motorola suggests we adopt a policy of phased assignments, not dissimilar from the plan established in the *Second Report and Order*. However, Motorola would begin with the minimum amount of radio spectrum necessary to establish a "cellular" system (i.e., 12.5 MHz), and would have us make additional spectrum available only when and as we determined, in further rulemaking proceedings, that additional spectrum were needed. This suggestion is rejected.

14. The allocation judgment reflected in the *Second Report and Order* is based on record evidence compiled in proceedings in which Motorola actively participated. This petition for reconsideration simply re-argues substantially the same issues [10] which were resolved in our *Second Report and Order, supra*. See, *e.g., Pacifica Foundation*, 17 Pike & Fischer, R.R. 2d 1073 (1969); *WWIZ, Inc.*, 3 Pike and Fischer, R.R. 2d 316 (1964).

15. In its reconsideration petition, AT&T also recommended that the spacing between the cellular base and mobile frequency bands be increased to 48 MHz rather than the 45 MHz spacing adopted in the *Second Report and Order*. Forty-eight megahertz corresponds to eight

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[10] For example, we decided in the *Second Report and Order* that licensees of cellular systems will be authorized to offer "radiotelephone" service to the public as well as limited "dispatch" service. Motorola now argues that any assignment of spectrum to cellular systems, beyond the initial 12.5 MHz, should be based solely on the need shown for "radiotelephone" requirements, but not on any "dispatch" requirements. The question whether "cellular" systems should provide dispatch service was a controversial one; Motorola has offered nothing not previously considered; accordingly, its petition for reconsideration must be denied.

television channels and would, according to AT&T, simplify frequency cordination with Canada where the 806-890 MHz band is allocated for television broadcasting.

16. AT&T's plan may offer some advantages in the border areas; however, considering the large number of planned Canadian television assignments using these frequencies and the fact that U.S. land mobile services will be operating in derrogation of international allocations, it will be difficult to coordinate any U.S. land mobile assignments along the border under either AT&T's plan or the plan adopted in the *Second Report and Order.* Any meaningful coordination with Canada must await completion of that country's own long range studies of future television and land mobile requirements.

17. Thus AT&T's proposed frequency shift would have no immediate advantages and only problematical future ones on our coordination with Canada and Mexico. On the other hand, it would eliminate possible channel pairing in an additional 6 MHz of reserved land mobile spectrum. The usefulness of that reserve spectrum for future two-way services would thus be greatly reduced. This problem would affect the whole country, not just the border areas. Therefore, on balance, we must reject AT&T's proposal, and the allocation plan will remain as adopted in the *Second Report and Order.*

18. The General Electric Company, Major Appliances Business Group, has asked for reconsideration of the portion of the *Second Report and Order* dealing with the frequency provision for 915 MHz ISM (industrial, scientific and medical) devices. Our decision in that document was to reduce the frequency tolerance of such devices to ±13 MHz effective January 1, 1980. Throughout the proceeding, GE has stated that it will not be feasible to manufacture microwave ovens capable of meeting this narrower tolerance. In our decision, we indicated, among other things, our view that the new tolerance

could indeed be feasibly met by 1980, and that if our basic objectives in this proceeding were to be achieved, such tolerances would have to be met. In its petition for reconsideration, GE reiterated that a practical oven could not be manufactured under the new tolerance by 1980, and that while it is willing to conduct research looking toward future reduction of the oven frequency tolerance, it could not justify spending money for such research or for further development and manufacturing of the 915 MHz ovens should the Commision adhere to the 1980 deadline. GE has requested that the 1980 cut-off date be replaced with a statement that the Commission will, in 1980, re-examine the desirability of imposing the narrower frequency tolerance, considering oven technology and other factors that exist at that time.

19. We conclude that the present regulations may be somewhat more restrictive than necessary to accomplish our immediate objectives. Accordingly, we recede to a recommendation made in an earlier General Electric filing as a more appropriate solution to this problem. In its "Additional Comments" of February 22, 1971, General Electric recommended a change in Section 18.144 of our Rules. This section describes the procedure to be used for type approving microwave ovens. The current procedure requires "(t)hat the frequency at all times during the tests . . . shall be maintained within 70 percent of the tolerance specified in Section 18.141(a)." The tolerance in Section 18.141(a) is ±13 MHz for ISM devices designed to operate at 915 MHz.[11] In its 1971 filing, General Electric requested that this testing procedure be changed so that the ovens could operate within the entire ±13 MHz tolerance. We will accept this suggestion.

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[11] Footnote 2 in both Section 18.13 and Section 18.141 states conditions in effect pending the outcome of Docket No. 18262. The deletion of these notes was inadvertently omitted in the *Second Report and Order*. We are deleting them at this time.

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20. Requiring ovens to remain within 70 percent of the tolerance is more restrictive than appears to us, on further reflection, necessary to protect future, yet-undetermined operations in the adjacent bands. Section 18.144(b)(1) will therefore be modified accordingly. Footnote US 215 to the Allocation Table is therefore amended to remove the provision which would allow ISM devices to make use of the 928-940 MHz band until 1980.[12] We are therefore establishing, effective immediately rather than in 1980, the ±13 MHz tolerance for 915 MHz ISM devices (which conforms to the ITU standard), by relaxing the testing procedure used in type approving these devices. These changes should remove the problem raised by GE and enable the continued manufacturing of 915 MHz microwave ovens. This relaxed testing procedure increases the probability of interference to future communications services operating adjacent to the ±13 MHz ISM frequency tolerance. It may be necessary to reexamine the need for tighter standards on 915 MHz ISM devices in the future when specific allocations to radio services in the adjacent bands are proposed.[13]

IV.

Policies Related to Cellular Systems

21. A number of parties requested reconsideration of certain policies relating to cellular communications systems. These petitions will be dealt with below.

22. GTE Service Corporation (GTESC), American Telephone and Telegraph Co. (AT&T), and the United

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[12] The new version of US 215 appears in the attached Appendix.

[13] We also point out that the Commission's Rules and Regulations contain a general provision in Section 18.17 which requires the operators of ISM devices to remedy any harmful interference which may be caused by those devices to authorized services operating outside the legal ISM tolerance.

States Independent Telephone Association (USITA) took exception to our requirement that wireline telephone companies establish separate operating companies, books of account and personnel for the operation of cellular systems. GTESC contends that "maximum separation" of cellular and other telephone company operations is counter-productive and not factually justified. It characterizes the basis for such separation as the equalization of competitors' positions, a policy which is said to violate the principles of *Hawaiian Telephone Co.* v. *FCC,* 498 F.2d 771 (D.C. Cir. 1974). USITA advances this view also, and argues in addition that cross-subsidy is not so difficult to identify or control that separate corporations are necessary. AT&T argues that the record in this docket does not support the separate corporation requirement and that such a policy could be reasonable only as a response to certain contingencies in the operation of cellular systems—contingencies which may never develop. AT&T also argues that the requirement represents a regulatory "handicap" which has proved counterproductive in other contexts; that it may make cellular service needlessly more costly by interfering with the "efficiencies and economies" belonging to the existing wireline structure; and that cross-subsidy can be avoided by other, less drastic means. Motorola, Inc., by contrast, argues that the separate corporation requirement is necessary if wireline companies are to enter the dispatch communications field and that the carriers have failed to demonstrate what efficiencies will be lost through such separation.

23. We have carefully considered the arguments advanced by each party with respect to the separate corporation requirement and find them largely unpersuasive. First, the separation requirement is inapplicable to the developmental stage. The risk that development will be retarded, we find, is acceptably small in view of the evil sought to be avoided. Second, our reprehension of cross-

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subsidy is not grounded solely on the competitive evils we believe it may cause, as arguments based on "Competitive Equalization" or on the *Hawaiian Telephone* case seem to assume. We are also concerned with consumers of the carriers' other services as well. If these other services are generating sufficient surplus revenues to subsidize a new offering at non-compensatory rates, consumers of existing services may be paying unreasonably high rates for them. We find that the requirement of corporate separation will significantly reduce the risk of cross-subsidy and, in addition, will make our supervision of this field's development much simpler and more effective. For this reason, we reject the petitions that we remove this requirement. We will, however, closely monitor the operation of the developmental systems (as to which no separation requirement has been imposed) in order to determine whether means less costly than actual separation exist, with respect to one or more carriers, to accomplish our policy objectives. Further submissions and suggestions may be presented in this connection at appropriate times.

24. A number of parties requested reconsideration of our policy against wireline carriers manufacturing, providing or maintaining cellular mobile equipment. GTESC contends that the prohibition is without record support and that it is premature and should be removed pending experience with the developmental phase. USITA believes that the prohibition will adversely affect the quality of service provided by cellular carriers and that each subscriber should have the option of obtaining equipment and service from the telephone company. AT&T expresses concern that a lack of initial availability of cellular mobile equipment and service from outside sources may reduce the practical availability of cellular service. It states that the user should be able to choose his supplier, equipment and service. Finally, AT&T submits that the prohibition should be modified at least to permit continued use of equipment in service during the developmental period.

The Magnavox Company opposes the prohibition on maintenance and supply. It submits that the removal of this restriction would result in increased opportunities for mobile equipment suppliers given the present concentrated structure of the mobile equipment industry. The California Mobile Radio Association (CMRA) and Motorola contend, on the contrary, that continuation of the present structures would be pro-competitive; that there will be no shortage of equipment given the numerous radio equipment suppliers that exist in the markets where cellular systems are likely to be installed initially. Further, Motorola says that use of independently manufactured equipment in developmental systems would avoid having to scrap developmental equipment once the system began regular operation.

25. We have concluded that supply and maintenance of equipment may be a limiting factor, particularly during the beginning period of system operation. Therefore: (1) carriers will be allowed to supply and maintain mobile equipment manufactured by others; (2) to avoid waste, we will not automatically bar the continued operational use by carriers or users of carrier-manufactured equipment actually in use in the developmental system, but will entertain applications to continue the use of such facilities in accordance with normal procedures for Section 214 or other authorizations; (3) finally, we reaffirm our decision that the cellular operators may not manufacture mobile equipment for use in their cellular systems except for equipment used in the developmental system.[14]

26. Several questions were raised regarding the offering of dispatch service on cellular systems. Motorola and Airsignal International believe that the Commission should make clear that dispatch service is strictly ancillary

[14] Only that limited class of carrier-manufactured equipment may under any circumstances be offered to customers after the system begins regular operation.

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to primary mobile telephone service. Motorola also contends that the intermingling of dispatch and telephone services lessens the efficiency of the cellular system and increases the cost to the user. Airsignal suggests that RCCs providing dispatch services in cellular markets be allowed a five-year head start.[15] CMRA submits that the wireline carriers should be severely restricted or prohibited altogether from offering dispatch service. AT&T contends that dispatch service is fundamental to the cellular concept and that a system serving both dispatch and mobile telephone users is more efficient.

27. Nothing in these submissions persuades us that the disposition of these matters embodied in the *Second Report and Order* should be modified. Accordingly, we stand by our previous decision to allow dispatch and cellular systems to be intermingled.[16]

28. Airsignal International, Inc. (Airsignal) has questioned our decision that only wireline carriers be licensed to operate cellular systems. Airsignal argues that this policy is unwise, because it effectively vests another monopoly in AT&T, and that it is not supported by the evidence, because it turns on the (unfounded) assumption that no other entity possesses the necessary resources, financial and otherwise, to proceed with cellular systems even on a limited developmental basis. Airsignal points out that if the Commission's factual conclusion is correct, then our policy conclusion is unnecessary, and concludes that, separately or as a member of a consortium, it would be willing and able to test and develop a cellular system

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[15] Airsignal also desires that wireline companies proposing to operate cellular systems be required to phase out the offering of paging services. The offering of paging services is not before the Commission in this proceeding.

[16] We also stand by our original determination in connection with "fleet-call" automatic dispatch service offerings. See *Second Report and Order*, paragraph 25.

in a fair competitive environment. AT&T in reply recapitulates and endorses the Commission's decision.

29. Our basic objective in allocating the 40 MHz of radio spectrum in the 900-MHz region is to accommodate the present and future requirements of the public for radiotelephone and limited radio dispatch services through an integrated, broadband, and fully interconnected radio communication system. In our *Second Report and Order*, we concluded, first, that a "systems" approach to frequency allocations would best achieve our objectives and, second, that cellular system technology would be the best way to meet the potentially large future requirements for public mobile radiotelephone and limited dispatch service. These basic determinations have not been seriously challenged by the petitioners. But the question has been raised whether we should rely *exclusively* on wireline communication carriers for the development and operation of these systems.

30. In the *Second Report and Order*, we found that wireline carriers were the only organizations which demonstrably had the resources and expertise necessary to establish "cellular" radio systems on a nationwide scale. Indeed, AT&T was alone in submitting comprehensive proposals for developing and implementing such systems. Nevertheless, we must concede the logic of Airsignal's argument that if we were correct that the wireline carriers were the only ones *capable* of cellular service offerings, then giving them *exclusivity* in this service would be superfluous. Accordingly, the restriction on eligibility contained in Paragraph I of Appendix C to the *Second Report and Order* will be removed so that any qualified entity, in addition to wireline carriers, will be permitted to apply for authorizations to develop and eventually to operate cellular radio systems of the type to be authorized under our rules. By expanding eligibility for cellular systems we do not, we emphasize, modify our basic decision to rely on

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cellular technology for the development of mobile radiotelephone service at 900 MHz. We will not consider any application for frequencies within the 40 MHz allocation in the Domestic Public Radio Service unless a cellular system is proposed.

31. Although cellular systems research has been developed to advanced stages by AT&T, considerable additional work must be done before standards may be prescribed for such systems on a regular basis, especially standards which would assure compatibility nationally. Therefore, as we announced in the *Second Report and Order,* until further order, only developmental cellular systems would be authorized. The total number of such developmental systems will be limited, of course, by our conclusion to authorize only one developmental cellular system in any market or service area; but the precise number we will authorize will depend on the overall progress of the developmental program. Following that program, we will adopt standards to which all systems, existing and new, will be required to conform. It must be especially emphasized that the granting of a developmental authorization cannot form the basis of any reliance concerning whether a regular authorization will be granted. Any grant for regular authorization will require the licensee to comply with such standards as we may adopt. When rules permitting regular operation are adopted, applications for conforming operational cellular systems will be considered on a case-by-case basis. If two or more qualified applicants apply for authorization to provide service to the same area, we will decide between them on the basis of a comparative hearing. *Ashbacker Radio Corp.* v. *Federal Communications Commission,* 326 U.S. 327 (1945).

32. As with developmental systems, then, we plan to authorize, on a regular basis, only a single system to serve a given market or area. At the same time we recognize that cellular systems as we envision them may not prove

to be economically feasible in all markets, particularly the smallest one. For this reason, we may find it appropriate at some future time to consider alternatives systems and licensing policies applicable to these markets, including the feasibility of more than one system per area. In this connection, we realize that our decision to allow competing applications for cellular facilities may create the possibility for significant delays in the implementation of "cellular" radiotelephone service, delays inherent in the comparative process. In this regard, being mindful of the past difficulties we have experienced, we find it necessary to guard against them to the extent that it is possible to do so. Accordingly, it will be important that all proposals for regular cellular operation meet standards which will assure us that the proposed facilities can be, and will be, constructed and will be placed in operation within the time limits we will prescribe and that the processes for comparative consideration will not be abused. Accordingly, we plan to apply the same definitive threshold qualification standards for acceptance of applications for cellular systems on a regular basis as we have prescribed for developmental applications; for considering objections to cellular proposals; and for any comparative evaluation of competing applications. These will be designed to assure that our public interest objectives we have set for ourselves in allocating radio spectrum for the cellular radiotelephone and limited dispatch service are achieved on as expeditious a basis as possible.

33. Applicants for developmental authorizations must, at a minimum, propose a radio system consisting of the following: The system must utilize a bona fide cellular configuration of base station transmitters and receivers to cover the proposed service area.[17] Base station trans-

[17] Further to clarify: in a cellular system, each "cell" is an identifiable geographic compartment within the system. Given radio frequencies are used in one cell and are re-used in a non-

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mitters must radiate no more radio frequency power than required to adequately cover each cell. Base stations must be connected together through a common switching and control point using wirelines. The radio system must be fully inter-connected with the public landline telephone network and be capable of providing a grade of service comparable to that of the landline system. Narrow band frequency modulation must be employed for all voice channels in the radio system, and each radio frequency channel must not exceed 40 kHz of authorized bandwidth. Radio frequency channels employed within each cell must be trunked for greater spectrum efficiency. While no more than 12.5 MHz will be authorized initially, a developmental cellular system must be capable of expanding to use the full 40 MHz, if required to satisfy the demand in the proposed service area. In major metropolitan areas the developmental system must have the potential for orderly evolution into a highly efficient small-cell configuration capable of handling a large number of subscribers within the allocated 40 MHz of spectrum.

34. Applicants for developmental systems will be required to submit a detailed program for constructing, developing and operating the proposed system, including a description of the technical and operational standards to be tested or to be developed and of the objectives to be achieved. The proposal must also include the applicant's time schedule for constructing the developmental system, for placing it in operation, and for developing it into a fully operational prototype. Further, since the applicant's financial as well as technical qualifications are particularly important here, the costs of the proposed system at the various stages of its development must be stated, and it must clearly be shown how the applicant proposes to finance the construction and operation of the system dur-

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adjacent cell in some other part of the system. Only a fraction of the assigned radio channels are used in any one cell.

ing the period of the authorization. The applicant's technical capability to design, construct and operate the proposed system must be shown, including a description of the nature and extent of the engineering facilities which the applicant has available for this purpose. In brief, it should be understood that highly complex systems of this kind will require considerable financial resources as well as technical expertise. Therefore, applicants should be prepared to make a convincing showing that they have the ability to establish a sound developmental program and that their program will make a substantial and unique technological contribution, looking toward establishing standards for a compatible nationwide system. It must be stressed that our decision to allow applications to be submitted by other than wireline carriers does not imply, and should not be taken to signal, any slackening of our view that the public interest requires that development of cellular systems be carried forward as swiftly as possible. It is vital that the frequency spectrum made available for this purpose be put to use without delay in order to serve the public needs for mobile radiotelephone and for limited dispatch service. There must be prescribed time limits within which an applicant who has received a developmental grant will carry out the proposal. Applications must include a proposed time schedule that must, at a minimum, call for beginning construction within one year following the grant and for completion of the developmental operation no later than January 1, 1979. We would expect to have adopted definitive technical standards and other regulations for regular cellular system operation by that date. We will monitor the developmental program closely and will require licensees to supply progress reports periodically to ensure that the developmental program is progressing in accordance with the applicant's representations set out in his original proposal.

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35. The independent wireline common carrier industry requested that the *Second Report and Order* be clarified or interpreted to permit a coordinated or integrated cellula system by wireline carriers in a given area when the communication market is served by more than one telephone company. It is unnecessary to rule finally on this request, and in any case the record evidence is inadequate to permit us to decide it properly. As noted above, the Commission will closely monitor the operation of the developmental systems. A final determination of the independents' request can more satisfactorily be made on the basis of whatever information we gather through this monitoring or from other sources during the intervening period.

V.

Issues Relating to the 30-MHz Allocation for the Public Safety, Industrial and Land Transportation Radio Services

Issue Raised Concerning Specialized Mobile Radio System

36. The decision to license SMR systems was taken in light of the many comments and proposals put forward in this Docket by written pleadings [18] and in oral argument before the Commission *en banc*. Under this aspect of our licensing plan, entrepreneurs were to be authorized to make radio facilities available for use by individuals defined as "eligible" in Parts 89, 91 and 93 of the Rules.[19]

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[18] As stated, SMR system licensing was the subject of much comment by interested parties. Among those commenting were: manufacturers (e.g., Motorola and GE); industry and other associations (e.g., National Association of Regulatory Utility Commissions, National Association of Business and Educational Radio, Inc., National Association of Radiotelephone Systems); and government agencies (e.g., Office of Telecommunications Policy and the Department of Justice).

[19] While the *Second Report and Order* regulatory scheme provided for "trunked" radiotelephone service, this feature is no

This was an important additional option for eligibles in these services. Up to then, the alternatives had been individual licensing and sharing systems under established "cooperative" and "multiple licensing" practices.

37. It was decided that SMR systems could be used to best advantage by adhering to the regulatory philosophy followed in the Safety and Special Radio Services. Accordingly, we carried over the detailed standards for eligibility, and adopted standards for channel loading, for permissible powers and antenna heights, and for station separations. In addition, we specified the types of systems we would permit, namely, "trunked" and "conventional." Further, we included statements of the policies and practices to be followed in assigning frequencies and in licensing stations for operation in the 900-MHz band. In short, all of the conditions under which radio systems would be authorized in the 900-MHz band were incorporated with great specificity in our new rules.

38. The decision to assimilate SMR systems into the Safety and Special Radio Services scheme of regulation has the following implications. SMR systems will be regulated in accordance with procedures followed in the Safety and Special Radio Services and protests based on economic grounds or "need" will not be entertained. Instead, SMR systems will operate under the same competitive conditions that prevail in the private dispatch market. Moreover, although we would pass upon the legal, the technical, and the other qualifications of applicants for facilities of this kind, we plan not to examine the financial qualifications of each applicant separately. Instead, we will ensure their performance as licensees through mandatory construction and loading requirements. And finally, applications for SMR systems will be processed with all

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longer a part of the plan; and we will make no further reference to it.

other 900-MHz proposals essentially in the order in which they are received.

39. Our decision to authorize SMR systems in the Public Safety, Industrial and Land Transportation Radio Services has been challenged by communications common carriers (i.e., AT&T and the so-called RCC's) essentially on the theory that, as a matter of law, SMR systems must be regulated as common carriers. This issue has become the most controversial one we have had to resolve in this rulemaking. We acknowledge that the matter is not free from doubt; but we rely on the latitude to which, as an expert agency, we are entitled in "coping with new developments" in "a dynamic industry." *Philadelphia Television Broadcasting Co.* v. *FCC*, 123 U.S. App. D.C. 298, 300, 359, F.2d 282, 284 (D.C. Cir. 1966).

40. The contentions of the communications common carriers have been subject to unusually thorough consideration by the Commission at every level. We now discuss the most important of these contentions. First, it is argued that SMR systems are, by definition, "common carrier" operations and, therefore, that Title II of the Communications Act requires us to regulate them as common carriers. Second, it is argued that Sections 2(b) and 221(b) of the Act[20] reserve to the states the power to regulate "radio common carriers," and that we have no authority to adopt a non-common carrier type regulatory approach for licensing such operations. Third, it is asserted that the plan for licensing SMR systems is inconsistent with the hearing provisions of Section 309 of the Act and with the *Ashbacker* doctrine.[21] Fourth, it is said that our plan is

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[20] Sections 2(b) and 221(b) were amended in 1954. See *H. Rept.* No. 910, 83d Cong., 1st Sess., 1953, accompanying H.R. 6436; and *S. Rept.* No. 1090, 83d Cong., 2d Sess., 1954, accompanying H.R. 6436. The cases cited and reviewed are, in part, cited in the text and listed at Appendices C and D.

[21] *Ashbacker Radio Corporation* v. *Federal Communications Commission*, 326 U.S. 327 (1945). Also, a number of parties have asked

contrary to Section 308 which requires consideration of financial, legal, technical and other qualifications of each applicant on an *ad hoc* basis. Fifth, it is argued that we

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that we reconsider our decision to license SMR systems in the Public Safety, Industrial, and Land Transportation Radio Services; and that we set it aside and conduct an evidentiary hearing before the Commission *en banc*. This point may be disposed of summarily. We conclude that such further proceedings are neither required nor would they be helpful. It is clear that the rule-making proceedings we have conducted were the appropriate vehicles for resolving the issues. This, of course, is basically an allocation proceeding with associated policy matters of general and future applicability. (See pertinent authorities: Sections 4(i) and (j), and 303(r) of the Communications Act. *Securities and Exchange Commission* v. *Chenery Corporation*, 332 U.S. 194 (1947); *Federal Communications Commission* v. *Pottsville Broadcasting Co.*, 309 U.S. 134 (1940); *National Broadcasting Co., Inc., et al.* v. *United States et al.*, 319 U.S. 190 (1942); *American Trucking Association* v. *United States*, 344 U.S. 298 (1953); *United States* v. *Storer Broadcasting Co.*, 351 U.S. 192 (1955); *Federal Power Commission* v. *Texaco, Inc.*, 377 U.S. 33 (1964); *Air Line Pilots Association International* v. *Quesada*, 276 F. 2d 892 (2d Cir., 1960); *Lafayette Radio Electronics Corporation* v. *United States*, 345 F. 2d 278 (2d Cir., 1964); *WBEN, Inc.*, v. *United States*, 396 F. 2d 601 (2d Cir., 1968); and *Washington Utilities & Transportation Commission et al.* v. *Federal Communications Commission et al.*, Case Nos. 71-2919 and 72-1193, United States Court of Appeals, 9th Cir., 1975, January 20, 1975, *affirming Specialized Common Carrier Services*, 29 FCC 2d 870 (1971). See also: *Philadelphia Television Broadcasting Co.* v. *Federal Communications Commission, supra; Mansfield Journal Co.* v. *Federal Communications Commission*, 86 U.S. App. D. C. 102, 180 F. 2d 28 (1950); *Peoples Broadcasting Co.* v. *United States*, 93 U.S. App. D.C. 78, 209 F. 2d 286 (1953); *Logansport Broadcasting Corp.* v. *United States et al.*, 93 U.S. App. D.C. 342, 210 F. 2d 24 (1954); *Zenith Radio Corp.* v. *Federal Communications Commission*, 93 U.S. App. D.C. 284, 211 F. 2d 629 (1954); *WIRL Television Co.* v. *United States*, 102 U.S. App. D.C. 341, 253 F. 2d 863 (1958); *Owensboro on the Air* v. *United States*, 104 U.S. App. D.C. 391, 262 F. 2d 702 (1959); *Metropolitan Television Co.* v. *Federal Communications Commission*, 110 U.S. App. D.C. 133, 289 F. 2d 753 (1964); and *GTE Service Corporation* v. *Federal Communications Commission*, 474

have substituted a scheme of "no regulation" in a utility field where regulation—by virtue of the nature of the service to be provided—is required. In such circumstances, it is contended, it is not enough to say that the "common carrier" approach to licensing is inappropriate, because that determination is inherent in the Communications Act itself. Hence, assuming the common carrier approach to be inappropriate, the remedy is not through rulemaking, but through amendment of the Communications Act.

41. Finally, it is contended that regulation of the SMR systems as planned is contrary to the public interest. This is so, it is urged, because the new approach will lead to destructive competition between regulated and non-regulated business enterprises, both offering the same types of services. The result will be the loss of important and

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F. 2d 724, 730-732 (2d Cir. 1973)). Where rule-making procedures of the kind we have employed in this case permit a sound evaluation and determination of policy to guide the future development of the industry and are also conducive to a prompt, orderly and efficient disposition of the matters in issue, we meet our statutory responsibilities by choosing the procedure most suitable to a resolution of the kind of issue before us. (See *Specialized Common Carrier Services, supra*, at p. 900; and *Washington Utilities & Transportation Commission* case, *supra*, affirming *Specialized Common Carrier Services* case.) All participants have been accorded a full opportunity to present their views and arguments on the SMR system issue. We have considered all material aspects of this question in great detail, and we find from our review of this material that there would be no public benefit to be derived from a further examination in an evidentiary hearing of what is basically a policy decision. The mere circumstances that an issue may be the subject of controversy does not require its resolution through an evidentiary or adjudicatory process. Neither the Communications Act, nor the Administrative Procedure Act requires this, neither does case precedent. In short, all parties have been accorded due process of law. More is not required. (See *Buckeye Cablevision, Inc.* v. *Federal Communications Commission*, 128 U.S. App. D.C. 262, 387 F. 2d 220 (1967); *Coastal Bend Television Co.* v. *Federal Communications Commission*, 91 U.S. App. D.C. 251, 234 F. 2d 686 (1956); and cases cited this *fn., supra.*)

valuable services now provided through radio common carriers. This aspect of the case alone, it is argued, is of great importance and, as a minimum, requires careful evaluation of all pertinent considerations in a separate rule-making proceeding.

42. The core legal question is whether the Commission has legal authority to follow the regulatory approach adopted for SMR systems. In finding that we have such authority, we have taken account of both the language of the statute and the regulatory goals we hope to attain. It is our conclusion, based on forty years of spectrum management, that the public interest cannot adequately be served by the allocation of additional radio frequencies to the land mobile radio services except by the regulatory approach outlined herein for the SMR systems. See paragraphs 51-78. We do not regard the statute as necessarily inconsistent with these findings. "In a statutory scheme in which Congress has given an agency various bases of jurisdiction and various tools with which to protect the public interest, the agency is entitled to some leeway in choosing which jurisdictional base and which regulatory tools will be most effective in advancing the Congressional objective." *Philadelphia Television Broadcasting Co.* v. *FCC*, 123 U.S. App. D.C. 298, 300, 359 F.2d 282, 284 (D.C. Cir. 1966). As we make clear in paragraphs *infra*, the public interest considerations pointing to the approach we have taken in the SMR system regulation are unusually obvious.

43. SMR systems and radio common carriers are undeniably similar from a physical standpoint: the engineering specifications each employs, for example, are for practical purposes identical. But that fact need not detain us. Every different form of radio communication, in every part of the electromagnetic spectrum, is similar to every other form in one degree or another. The differences in the regulatory constraints applicable to each are explained

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with reference to the distinctive purposes we intend each to serve. Radio common carriage has essentially functioned to extend public telephone service to moving vehicles; in order to meet this service objective, the Commission has thought it best to impose no restrictions on eligibility as to users, nor on the length or content of messages. SMR systems, on the other hand, are meant to have a fundamentally different application. These may only be licensed to provide base station facilities for "dispatch" service. Unlike common carrier services, dispatch systems are not necessarily interconnected with the telephone system, rather, they are usually designed to meet the internal business requirements of their users—the dispatch of taxicabs or service vehicles, for example. Rules limit what users are eligible for this class of service: and, consistent with its different intended functions, users in fact employ such systems very differently from how common carrier systems are used. Communications on such systems are ordinarily very abbreviated, or even coded, to allow for the maximum possible transmission of information in a given period of time.[22]

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[22] Under our revised licensing procedures, the user of SMR systems will be licensed directly by the Commission for those parts of the system he is to use exclusively (e.g., control stations and mobile units). This system of supervision will enable us to ensure that each user is actually eligible and that the facilities are employed for permissible purposes and are otherwise being operated in compliance with the specific restrictions and limitations that have been imposed. In our view, SMR systems are an additional option by which eligibles in the Public Safety, Industrial and Land Transportation Radio Services may obtain the physical facilities necessary to make use of the radio frequencies that have been made available for their specialized radio communication requirements. In keeping with its nature and purpose, SMR system operation is to be subject to the same governing restrictions and limitations applicable to other operations in the Public Safety, Industrial and Land Transportation Radio Services, and SMR facilities are to be made available under the same marketing practices under which licensees in these services now provide themselves with the radio

44. The Communications Act, viewed as a whole, gives us the authority to authorize and to regulate SMR systems in the manner described above. See Sections 1, 4(i) and (j) and Sections 301 and 303 of the Act; see also *National Broadcasting Co.* v. *United States*, 319 U.S. 190 (1942); *United States* v. *Southwestern Cable Co., et al.*, 392 U.S. 157 (1968); and *Philadelphia Television Broadcasting Co.* v. *Federal Communications Commission*, 123 U.S. App. D.C. 298, 359 F.2d 282 (1966). We fully appreciate our responsibility to exercise our authority in a way that is "not inconsistent" with the statute. See, for example, Sections 4(i) and 303(r). If we were to conclude that SMR systems should be considered interstate common carriers in the ordinary sense, within the meaning of Section 3(h) of the Act, our regulatory plan would be designed to assure, for example, that the rates charged were "just and reasonable." See Section 201(b) of the Act; see also *Federal Power Commission* v. *Texaco, Inc.*, 417 U.S. 380 (1974). Further, if we had concluded that they were intrastate common carriers or intrastate "telephone exchanges" within the meaning of Sections 2(b) or 221(b) of the Act, a different regulatory approach would clearly have been required.

45. In summary, we view SMR systems as a new class of station to be licensed in the Public Safety, Industrial and Land Transportation Radio Services, where, we have said, licensees are properly not subject to traditional common-carrier-type regulation. Our authority to establish this new class of station derives from Sections 303(a) and (b) of the Act. As discussed more fully *infra*, at paragraphs 62-78, we have found on the basis of the record before us that competition, and only competition, will assure that the radio frequencies allocated herein will be best utilized

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gear they need. In short, SMR systems are to be an integral part of the existing Public Safety, Industrial and Land Transportation Radio Services.

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in the public interest. The petitioners' argument that we have substituted a "no regulation" scheme for regulation must accordingly be rejected.

46. We have also concluded that our new rules do not violate the provisions of the Act nor the principle of *Ashbacker*.[23] In meeting our obligations under Section 308(b),[24] all of the requirements for obtaining a radio station authorization have been spelled out in detail in the rules.[25] Each application will be examined to determine if the proposal meets minimum legal and character qualifications, as well as technical, operational, frequency loading, and other requirements. However, the new rules do not require an applicant to show that he has the financial qualifications to construct the proposed facilities. Instead, licensees of "trunked" SMR systems, for example, will be required to begin construction of the authorized facilities within six months of authorization and to complete construction within one year. Further, the licensee must "load" his facility in accordance with express standards set out in the new rules. If he does not, the frequencies assigned, or some of them, will be made available for use by other eligible persons. This method, in our view, is prefer-

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[23] *Op. cit., supra, fn.* 17.

[24] Section 308(b), in pertinent part, reads:

"All applications for station licenses, or modifications or renewals thereof, shall set forth such facts as the Commission by regulation may prescribe as to the citizenship, character, and financial, technical, and other qualifications of the applicant to operate the station; the ownership and location of the proposed station and of the stations, if any, with which it is proposed to communicate; the frequencies and the power desired to be used; the hours of the day or other periods of time during which it is proposed to operate the station; the purposes for which the station is to be used; and such other information as it may require."

[25] See *Land Mobile Radio Service, supra, fn.* 2, at Appendix B, together with Appendix B, attached hereto.

able to the examination of a financial statement to ensure that the frequencies assigned will be used effectively. The Communications Act gives us ample flexibility in this area to adopt measures most conducive ". . . to the proper dispatch of [our] business and to the ends of justice." *Section 4(j) of the Act.* See *Federal Communciations Commission* v. *Pottsville Broadcasting Co.*, 309 U.S. 134 (1940).

47. As to Section 309, the carriers contend that the *Second Report and Order* improperly failed to provide for "public notice" of the filing of SMR applications and related procedures set forth in Section 309(b) and (d). The statute, itself, does not require this in the Safety and Special Services, except in certain situations not pertinent here.[26] However, interested parties will be given notice in accordance with the practices and procedures followed in Public Safety, Industrial, and Land Transportation Radio Services.

48. The carriers also seem to argue that the *Second Report and Order* unlawfully circumscribes Section 309 petition to deny and hearing rights. In this respect, we wish to clarify that our previous decision only announced that petitions to deny and adjudicatory hearings on questions of "need" or "economic exclusivity" would not be entertained. While we have no doubt that hearings may be ordered where substantial and material questions of fact are presented, or where we find ourselves unable to determine that the public interest, convenience, and necessity would be served by the grant of a particular application, we believe that we have the authority to anticipate and to resolve expected recurrent issues of broad policy nature on an overall basis and thus obviate the need for subsequent *ad hoc* determination of similar issues through the adjudicatory hearing process. This is also the approach we followed in resolving substantially simi-

[26] See 47 U.S.C. Section 309(b) and 47 C.F.R. Section 1.962.

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lar issues in *Specialized Common Carrier Services,* 29 FCC 2d 870 (1971). See in particular, pp. 896-903 and 921-927.[27] As we pointed out in that case, the statutory standard governing our consideration of all applications, under Section 309, is whether a grant would serve the public interest and this standard must be applied in the context of the overall objectives of the statute expressed in Sections 1 and 301 of the Act. In our *Second Report and Order,* we determined that the statutory objectives would best be achieved and the public interest would be served best by authorizing SMR systems on an open entry, competitive basis and, in view of that determination, we believe that we properly concluded that it would not be necessary to consider anew, on a case-by-case basis, questions relating to the need of a proposed new system or its economic impact, if any, on existing systems. We think this is a permissible approach to the resolution of an overall policy issue, and it is consistent with the scope of the provisions of Section 309. *Specialized Common Carrier Services* case, *supra.*

49. The actions in this and in previous proceedings allocating a substantial amount of additional radio spectrum to the Public Safety, Industrial, and Land Transportation Radio Services were based on our determination, in this and in previous proceedings and studies conducted over more than a ten-year period, that there are very substantial, unsatisfied requirements for land mobile communications in these specialized radio services, and that those requirements will continue and will grow further in the foreseeable future.[28] Our overall plan for

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[27] Our decision in the *Specialized Common Carrier Services* case was affirmed in *Washington Utilities and Transportation Commission et al.* v. *Federal Communications Commission, et al.*, Case Nos. 71-2919 and 72-1193, United States Court of Appeals, 9th Cir., January 20, 1975.

[28] *Frequency Allocation in 450-470 Mc/s Band, Second Report and Order,* Docket No. 13847, 11 FCC 2d 648 (1968); *Land Mobile*

accommodating these requirements, adopted in the *Second Report and Order,* includes a regulatory approach which permits the operation of a free, competitive market, including free entry, as the best method for developing the new system designs, new technology, and new marketing techniques which we felt were necessary for the fuller development of the new spectrum. Also, for reasons further explained in a subsequent section in this opinion, we have determined that competition, including free entry, is feasible in that the nature and the size of the market and the radio spectrum resources will support multiple and competing systems; that it is consistent with competitive marketing practices traditionally followed in these services, and that it will benefit the users. In view of these findings, re-evaluating questions of "need" or "economic impact" through the adjudicatory process would be inconsistent with our overall plan and objectives and, therefore, it would be highly inappropriate.

50. On the question raised concerning the *Ashbacker* doctrine, we would observe that it applies only where there are two or more applications and where all cannot be granted because of interference or other considerations, i.e., when they are "mutually exclusive" with one another. Whether such situations will exist at 900 MHz is not known; but we are confident that it is highly unlikely. This is not perchance, rather it is because we have allocated sufficient frequencies, 30 MHz plus reserves, to accommodate expected demand. However, should the situation arise where we cannot grant all

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Use of TV Channels 14 through 20, First Report and Order, Docket 18261, 23 FCC 2d 325, 327-339 (1970); *Frequency Allocation in the Band 806-960 MHz, First Report and Order and Second Notice of Inquiry,* 35 F.R. 8644 (June 4, 1970), at paras. 5 through 9. For other studies relating to the question of land mobile frequency requirements, see *Land Mobile Use of TV Channels 14 through 20, supra.,* this *fn.,* at *fn.* 3, p. 326.

applications, in accordance with applicable law, hearings will be held, obviously. The *Second Report and Order* so states. Accordingly, we see *Ashbacker* as no bar to the implementation of our plan; and in view of these considerations, we believe that the regulatory plan adopted in the *Second Report and Order* for SMR systems complies with all case law and statutory requirements.

The Public Interest Considerations in Licensing SMR Systems

51. We now discuss the public interest considerations involved in our decision to license SMR systems in the Public Safety, Industrial and Land Transportation Radio Services and to regulate them in the manner we have described. The reasons for our decision and the objectives we seek to achieve can be best explained if we summarize the historical context in which that decision was made.

Background

52. Private land mobile radio systems had been in existence for many years—indeed, some antedated the creation of the Commission—[29] when the Public Safety, Industrial and Land Transportation Radio Services were established on a regular basis following a series of length hearings in the late 1940's. *General Mobile Radio Service*, 13 FCC 1190 (1949). At that time we decided, among other things, that the public interest would be served by allocating a part of the radio spectrum to meet some of

[29] By 1933, for example, the Federal Radio Commission had issued a number of authorizations in the "Emergency Radio Service," including 111 municipal police stations, 12 state police stations, and 26 "Special Emergency Radio Stations." By 1948, we had 5,000 "Emergency" stations, including 4,137 Police Stations; approximately 3,600 stations in the land transportation category (railroads, transit operations, intercity buses, and taxicab companies), and 600 stations authorized under experimental and miscellaneous classifications.

the specialized needs of local government and private industrial and transportation enterprises. For this purpose, we established the Public Safety, Industrial and Land Transportation Radio Services. We also allocated radio frequencies to serve the mobile radio communication needs of the general public, and for this purpose we created the Domestic Public Radio Services; and, as to this service, a different regulatory approach was adopted.[30]

53. One of the important aspects of the *General Mobile* decision was our determination that certain activities of local governments—i.e., police and fire protection—and of industrial and transportation enterprises could be facilitated by the use of radio. We found that making radio available for these purposes results, e.g., in improved police and fire protection, safer and more efficient railroad service, more reliable electric utility service, and safer and more effective petroleum exploration and production. Accordingly, we allocated approximately 40 MHz of radio spectrum for these purposes.

54. The regulatory approach adopted was relatively simple. First, we established specific radio services, e.g., the Police Radio Service; the Fire Radio Service; and the Petroleum, Power, Railroad and Motor Carrier Radio Services, among others. We then developed strict criteria to govern eligibility and use; and we also placed limits on permissible methods of operation. Further, to assure efficient use of the spectrum allocated, we adopted what were at the time advanced technical standards.

55. In addition, the frequencies were made available in "blocks," that is, certain groups of frequencies were designated for the exclusive use of eligibles in a particular radio service. In short, all the criteria for licensing radio systems and for their use were set out in detail in these

[30] The regulations governing the "Domestic Public Radio Services" are now included in Part 21 of the Rules.

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regulations. Application processing could be carried out quickly because all of the norms and policies governing the licensing of stations in these services had been worked out in advance through our rulemaking processes.

56. This regulatory method proved extremely successful; and undoubtedly facilitated the rapid growth of radio communication in Public Safety, Industrial and Land Transportation Radio Services.[31] Further, land mobile communication systems developed into indispensable aspects of the public safety, industrial, transportation, and commercial activities of this nation.[32]

57. The growth of these specialized services placed a greater-than-anticipated demand on the radio spectrum allocated to them; and while we made determined efforts to satisfy the growing needs for land mobile facilities through more intensive use of the available spectrum,[33]

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[31] In 1949, there were about 12,000 licensees authorized to operate approximately 150,000 radio transmitters. By 1970 these numbers had grown to approximately 290,000 licensees and 3 million transmitters, respectively. See *Land Mobile Use of TV Channels 14 through 20,* 23 FCC 2d 325, at pp. 333-334.

[32] See *Land Mobile Use of TV Channels 14 through 20, supra,* at pp. 329-338; and *Allocation of Frequencies Between 25 and 890 Mc/s, Report and Order,* Docket No. 11997, 29 F.R. 4820 (April 4, 1964) at paras. 8 through 95. The value of land mobile radio was recognized early by other groups. As a result of their petitions, we instituted several rule making proceedings in which we established, in 1958, the Local Government, Manufacturers, Telephone Maintenance, and Business Radio Services.

[33] For example, we created additional operating frequencies by "channel splitting," whereby the separation between assignable frequencies was reduced. This "channel splitting" technique required more sophisticated radio equipment and tighter technical standards. We followed this process in a number of proceedings, the latest one in Docket No. 13847. *See Channel Splitting in the 450-470 Mc/s Band, First Report and Order,* Docket No. 13847, 5 FCC 2d 779 (1966).

we recognized that additional radio spectrum would eventually be required. There followed a 15-year period of examination and study of varying proposals to determine the nature and extent of the existing and future requirements of the land mobile radio services and how these requirements could best be accommodated.[34]

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[34] In this connection, we issued an *"Order of Inquiry"* in Docket No. 11997, 22 F.R. 2684 (April 17, 1957), which looked toward an examination of the frequency allocations between 25 and 890 Mc/s. Although this was a broad inquiry encompassing all of the radio services (Broadcasting, Common Carrier, and Safety and Special), the comments of the parties, as well as their oral presentations before the Commission *en banc*, were directed primarily to the needs and requirements of the land mobile radio services. This inquiry was concluded by our *Report and Order*, Docket No. 11997, 39 FCC 567, 29 F.R. 4820 (April 4, 1964). In that decision, while recognizing the requirements of the land mobile radio services for additional spectrum, for reasons that obtained then, we decided not to allocate additional frequencies to those services; rather, we instituted a number of proceedings and studies looking toward accommodating the needs for additional land mobile communication facilities through more intensive use of the spectrum already allocated for use in these services. See *Report and Order*, Docket 11997, *supra*, at para 111. These efforts were pursued through the "Advisory Committee" we established for that purpose (See *Public Notice*, FCC 64-266, March 27, 1964); through the rule making and inquiry proceedings in Docket Nos. 15398 and 15399; and through a staff group known as the "Land Mobile Relief Committee." The problem was also examined by presidential commissions (President's Commission on Law Enforcement and Administration of Justice; and President's Advisory Committee on Civil Disorders); and by Congress (see *H. Rept.* No. 91-982, 91st Cong., 2d Sess., April 7, 1970; *H. Rept.* No. 1978, 90th Cong., 1st Sess., December 23, 1968). Further in this regard see: *Report of the Advisory Committee for the Land Mobile Services*, November 30, 1967; the *Report of the Joint Technical Advisory Committee of the Institute of Electrical and Electronics Engineers and the Electronic Industries Association, Spectrum Engineering, the Key to Progress*, 1966; and the *Report of the Telecommunications Science Panel of The Commerce Technical Advisory Board of the U.S. Department of Commerce, Electromagnetic Spectrum Utilization—The Silent Crisis*, October 1966.

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58. As a result of these efforts, we decided first to allocate additional spectrum and second to develop ways and means for improving spectral efficiencies through more effective management of the spectrum and through a "systems approach" which would take advantage of the advances in technology and permit spectrum economies which had not been possible in the past. Thus, in our decisions in this rule making and in the companion proceeding in Docket No. 18261, we took steps to accomplish both goals.[35]

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[35] In Docket No. 18261, we made spectrum available to accommodate "immediate" land mobile requirements through a plan for the shared use of a limited number (one and in some instances two) of the UHF TV Channels 14 through 20 (470-512 MHz) in ten of the largest urban areas. We also adopted measures to improve the methods of assigning and using these frequencies. For example, we departed from the "block" allocation approach and, instead, made the frequencies available in "pools." We also introduced frequency "loading" standards and station separation criteria ("reuse" standards) to assure that the new channels would be more effectively and efficiently used than they had been in the past. Other adjustments were made to carry out these objectives in further actions in this Docket. See *Land Mobile Use of TV Channels 14 through 20, First Report and Order*, Docket No. 18261, 23 FCC 2d 325 (1970); *Land Mobile-UHF TV Channel sharing, Second Report and Order*, Docket No. 18261, 30 FCC 2d 221 (1971); *Land Mobile Use of TV Channels 14-20, Third Report and Order*, Docket No. 18261, 36 FCC 2d 588 (1972); *Public Safety Services, Fourth Report and Order*, Docket No. 18261, 43 FCC 2d 949 (1973); *Land Mobile/UHF-TV Sharing Plan, Fifth Report and Order*, 48 FCC 2d 360 (1974); and *Reallocation of Mobile Channels in 470-512 MHz Band in New York and Los Angeles Urbanized Areas*, 49 FCC 2d —— (1975), 39 F.R. 44204 (December 23, 1974), corrected, 40 F.R. 1021 (January 6, 1975). As part of our efforts to introduce new "efficiencies" in the assignment and use of the land mobile frequencies, the Stanford Research Institute was engaged to independently study land mobile spectrum utilization and to recommend methods and techniques for improving our frequency assignment practices and processes. See Dayharsh and Vincent, *Report of Stanford Research Institute, "A Study of Land Mobile Spectrum Utilization,"* (1970) (hereinafter "SRI" study). Based primarily on the results of the SRI study, we instituted a pilot program to put into practice some of the

59. In this proceeding, in our *First Report and Order,* we made 115 MHz available for land mobile facilities; and we prescribed the broad parameters for the systems approach to frequency allocation, assignment and use. In addition, in our *Second Notice of Inquiry,* we asked for proposals for making "most effective use" of the new spectrum, specifically requesting "innovative" ideas directed to the use of the 40 MHz we had allocated to the Public Safety, Industrial, and Land Transportation Radio Services.[36]

60. The second phase of Docket No. 18262, extending from 1970 through 1974, produced exhaustive studies. A number of significant concepts were developed by various parties. Also, a number of important recommendations were made looking toward better spectrum management policies. Thus, the tenor of the overwhelming majority of the filings was that, although conventional land mobile radio systems would continue to play an important role in satisfying specialized communication requirements, new innovative techniques, specifically including "trunking" techniques, would be necessary for the more effective development of the new radio spectrum; and that a regulatory framework favoring free competitive market conditions would be essential in order to foster the introduction

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management techniques developed by SRI which included intensive monitoring of land mobile frequencies with sophisticated equipment built for that purpose; and the use of computer technology for storing data and for calculating operational parameters and, additionally, for selecting frequencies for assignment to our licensees. *Spectrum Management-Land Mobile Allocations, Second Report and Order,* Docket No. 19150, 38 FCC 2d 625 (1973).

[36] *First Report and Order and Second Notice of Inquiry,* Docket No. 18262, 35 F.R. 8644 (June 4, 1970), at para. 38. See also para. 7 where we stated that "we will encourage and expect the design of new and highly efficient communication systems in the exploration of spectrum space newly allocated herein to the land mobile services," and para. 9 where we conclude that "it is essential in the public interest that every encouragement be given to the development of new techniques in the efficient use of bands allocated for 'private' land mobile systems . . . .".

of "trunked" systems on a sufficiently large scale to justify the necessary investment. This was so, it was pointed out, because the basic radio equipment for use at 900 MHz would be more costly and also because of the need for sophisticated design features, e.g., the computers needed to make "trunked" systems work; the requirement for satellite receivers and associated wire line facilities; and other necessary elements of the new 900-MHz systems.

61. We knew the additional cost involved would be large and in many instances would discourage individual users from making the investment necessary to establish facilities of this kind. Therefore, it was important, in our view, to provide them with an alternative. The SMR system option we adopted was suggested by the parties and was shown to be a feasible mechanism through which modern, 900-MHz technology could be made available over a broad base to eligibles in the Public Safety, Industrial, and Land Transportation Radio Services. Before adopting this approach, we examined it carefully in all of its aspects and concluded it was the best option available for the purpose and was one consistent with public interest considerations.

The Nature of the Public Safety, Industrial and Land Transportation Radio Services

62. Initially, we wish to emphasize that SMR systems have been established to make it possible for eligibles in the Public Safety, Industrial, and Land Transportation Radio Services to obtain the radio facilities they need to carry out authorized licensee functions and activities.[36] These facilities are to be used by them as a "tool" to permit them to fashion the required systems of communication to fit the particular function for which they are needed.

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[36] This SMR option is, of course, one of several alternative arrangements available to licensees in the Public Safety, Industrial, and Land Transportation Radio Services for providing themselves with the radio equipment needed to carry out authorized licensee activities and functions.

63. In this regard, the variety of system designs corresponds to the myriad of local governmental, industrial, and transportation functions into which they are integrated. For example, radio systems serving the communication needs of railroads are not the same as those needed by a metropolitan police department, nor are they the same as those needed to meet the state-wide coverage requirements of some electric and gas utilities or state police departments, or state forestry agencies. Also, there are many low-power radio systems designed to provide services within manufacturing plants, within building complexes, or at construction sites. Further, there are large systems comprised of several base stations and hundreds of mobile radio units, but there are also a great variety of small systems consisting of a base station and a few mobile units.

64. Most of these systems are used for dispatch purposes, *i.e.*, for the transmission of orders to vehicles in the field. Others are used for "operational" purposes—to allow supervisors in the field to coordinate and manage the activities of their field forces and to enable them to keep informed about developments at headquarters. Many radio systems are used in activities involving safety, so that instantaneous availability of communication channels is of vital importance. Message lengths and circuit discipline vary, and traffic patterns are not always the same, since they depend in essential ways on the activities in which radio is used. These illustrations show some of the ways in which radio is used and bring out the need for "flexibility" in designing facilities that will meet the specialized and particular requirements of the user, wherever that user may be, whether in a densely populated urban center; an isolated construction site or drilling area; along a remote pipe line right-of-way; on in locations where inherently "dangerous" activities are carried out, e.g., power generation, blasting, or remote control of locomotives.

65. In view of the variety of needs and the required flexibility in system design, structured, tariffed, regulated common carrier systems would be wholly ineffective in meeting these specialized requirements of land mobile users. Indeed, we believe it would be extremely difficult, perhaps not possible at all, to structure tariffs which would cover all of the almost infinite variety of service requirements. These requirements, in our view, can best be met in a climate of competition where there are multiple sources of supply and where eligibles can negotiate individually and independently for the specialized facilities they believe will best serve their purposes.

66. SMR systems have the flexibility needed to meet the needs of many small users or a few large ones. Thus, they can play a significant role in providing facilities for a number of independent radio users who will share base station facilities. They can also accommodate the requirements of a single user. For example, a municipality may contract with one or more enterpreneurs to construct and maintain communication systems designed specifically for its use.

67. This approach is consistent with existing practices under which land mobile radio licensees in the Public Safety, Industrial, and Land Transportation Services obtain the physical facilities they require to use radio in carrying out authorized activities. For a variety of reasons, but primarily because of the nature of the private dispatch market, carriers authorized in the Domestic Public Radio Services have not been responsive in meeting the specialized requirements we have described. The vast preponderance of these needs have been satisfied through individual arrangements negotiated by individual users under competitive market conditions—the same as those contemplated here. In short, we have concluded that the regulatory approach we have adopted is not only better suited to these services, but is the only approach which

will permit users the full span of alternatives they should have in securing needed radio equipment for their use.

Application Flow

68. Currently, we process, yearly, over 120,000 applications in the Public Safety, Industrial, and Land Transportation Radio Services. These include applications for new, renewed, and modified radio station authorizations. We have, perforce, learned to dispose of these applications within 30 to 90 days. We plan to carry forward the practices and procedures that have made such efficiency possible into the processing of 900-MHz applications. To this end, all major policy issues have been worked out in advance in rule making; the standards and conditions under which licenses will be granted have been perfected and included in the rules. This method, we believe, will allow us to process 900-MHz applications within periods ranging from 30 to 90 days, also.[37]

69. Speed in the initiation of new service is important in the Public Safety, Industrial, and Land Transportation Radio Services. Radio is an important "tool" in government and industry, not only promoting efficient use of capital plans and personnel, but also promoting the safety of people and property as well. Radio facilities must be available when they are needed. Obviously, if SMR systems are to serve as an effective option for eligibles in these services, they must be authorized under parallel procedures. Our plan provides for this.

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[37] As we pointed out in our *Second Report and Order*, this efficiency in application processing has not been possible in the Domestic Public Radio Services. In those services the practices are such that delays of up to a year are not uncommon and in many cases grants take up to 4 to 5 years. It is clear that procedures of that type would prevent us from meeting urgent demands for Safety and Special radio facilities; and this, in our view, would be contrary to manifest public interest requirements. See *Land Mobile Radio Service, Second Report and Order*, Docket No. 18262, *supra*, at p. 765, *fn.* 5 and associated text.

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Competition is Necessary, Feasible and Desirable

70. Our conclusion that competition would be preferrable to regulation in promoting the best use of spectrum at 900 MHz is supported by the following reasons. First, the 900-MHz region of the radio spectrum is new and untried as far as land mobile communications are concerned. Although technical information developed in recent years indicates that frequencies in this range are suitable for land mobile purposes, uncertainties remain as to the precise propagation characteristics in this part of the spectrum. Radio equipment for operation at 900 MHz is now being developed. While we have "type-accepted" some models, there is as yet no large scale production.[38] Further, as past experience indicates, additional models will have to be developed and improved before they will be fully accepted by the land mobile users. As importantly, radio system designs are in a developmental stage, particularly the "trunked" systems on which we have placed so much reliance. Although trunking technology is well known, automatic trunked systems have not been used in these services. Consequently, just how to design them to meet the large variety of special requirements of radio dispatch users must still be worked out under actual operating conditions. Significant investments must be made by existing radio equipment manufacturers, and new companies must be encouraged to enter the market, if the full potential of the advancing technology is to be realized. The system proposals which have been made thus far look promising, but development and experimentation remain to be done.

71. For full development of new types of radio equipment suitable for 900-MHz frequencies; for the new spectrally efficient communications systems we expect at 900 MHz, particularly the large trunked systems, and for the

[38] "Type acceptance" is our program for assuring that radio equipment complies with our technical standards before being offered for sale. See Subpart J of Part 2 of the Rules.

new communication techniques, such as non-voice uses, the manufacturers of radio equipment must put forth a substantial effort and must invest large sums of money at the developmental stage—far in advance of being able to sell their products. It is axiomatic that a potentially large market is needed to maintain the interest of manufacturers and to further encourage them to continue to make the kind of capital investments necessary for meaningful development of these systems. Unless we provide access to this market for all potential suppliers, we may not get the efficient new kinds of systems that are essential for the realization of the full and proper potential of the spectrum we have made available in the 900-MHz band. Based on the comments in this proceeding, we believe that the required market access will exist only if there is a regulatory approach which will allow enterpreneurs the freedom to enter the market place without regulatory restraints or delays. Thus, under the approach we have adopted, we will be able to authorize in a given area a large number of SMR and other systems and this will translate into a sufficiently large and diversified market nation-wide to warrant development of "trunked" and other systems and their production in sufficiently large quantities. In this way these kinds of systems would be made available to a large number of users and at reasonable costs. By contrast, a regulatory approach with limited entry or other common-carrier-type regulatory restraints in licensing SMR systems would, in our view, limit the market to be served by the large trunked and other communication systems and equipment designs, which we feel are needed, to the point where these kinds of systems would simply not come into existence. In summary, we believe that a competitive environment is necessary for the full development of the wide range of equipment and systems designs which will be required to promote and ensure the more efficient and effective use of the 30 MHz af radio spectrum at 900 MHz.

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72. Our conclusion, here, is based not only on the persuasive presentations of the parties, but also on our experience with existing marketing practices. As a result of open entry policies, we would note that the private land mobile radio services have been able to grow rapidly and flexibly and have been able to respond meaningfully in meeting the expanding requirements for land mobile communications. In brief, this regulatory approach has been successful and has brought about many benefits to users in the Public Safety, Industrial, and Land Transportation Radio Services and, significantly we think, to the general public as well.

73. The 30 MHz of spectrum allocated can accommodate 600 single-channel conventional systems; or 30 20-channel trunked systems; or various other possible combinations in each market. Forty-five additional MHz have been placed in "reserve," and this "reserve" may be drawn upon to meet demands as they arise. The 30-MHz allocation alone, however, is adequate to provide high quality service to 60,000 or more mobile radio units in any one market. Thus, the new allocations will allow us to provide for a large number of competing systems and, it follows, competition is possible.

74. Competition is also feasible because the demand for land mobile communications is considerable and expanding steadily. To illustrate, in 1949 we had authorized about 150,000 radio transmitters in the Part 89, 91, and 93 services; by 1970 this number had grown to nearly 3 million; and our records indicate that in 1974 we had authorized over 6 million transmitters.[39] Further, in 1970, we projected the number of authorized mobile units would double by 1980; and this estimate has been substantiated by our

[39] The figures given are for "authorized" transmitters. While not all of the "authorized" transmitters are put in operation, these figures do show a rapidly growing demand for private land mobile facilities.

experience to date.[40] Also, the volume of applications has been increasing steadily, so that each year the number received is approximately 10 percent greater than the number of proposals filed during the previous year. Moreover, with the availability of the new frequencies it is reasonable to anticipate an accelerated growth. This has been our experience each time additional spectrum has been made available. Further, new uses of radio, those developed and being developed, will add appreciably to the potential of the market. The comments point to these new uses of radio, non-voice communications, as growth areas; and there is substantial interest in them. This, too, supports our expectation for an expanded land mobile dispatch market at 900 MHz.

75. In summary, then, the allocation we have made for private dispatch systems and the prospective growth of demand, combined with relatively limited scale economies in SMR systems, allow us to conclude that competition is feasible and desirable.

Benefits

76. Although we have mentioned some of the benefits we expect to flow from our decision to authorize SMR systems on an open entry, competitive basis in the Public Safety, Industrial, and Land Transportation Radio Services, we believe it will be helpful to summarize a number of the more significant benefits. Thus, SMR systems authorized on an open entry, competitive basis should:

(a) Foster the development and production of a wider range of models of the new and improved radio equipment needed for operation on 900-MHz frequencies. This is important because 900 MHz is a new and untried part of the spectrum as far as land mobile use is concerned, and a wide

[40] *Land Mobile Use of TV Channels 14 through 20, First Report and Order,* Docket No. 18261, *supra,* p. 334.

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range of new equipment designs will be required to take advantage of, and to adjust to, the propagation characteristics and technical limitations that obtain at this range of the spectrum.

(b) Stimulate the development and production of the spectrally efficient communication systems, particularly "trunked" systems, on which we have placed great reliance for improved efficiency in the use of the new spectrum. In "trunked" systems, for example, a "communication channel" can accommodate more users than in systems authorized in the past. Our loading standards are geared to this. While, for now, we have adopted conservative channel occupancy standards for "trunked" systems, we expect that, in the future, a greater number of users can be accommodated. This is significant, because radio spectrum is limited; and we have an obligation to see to it that it is used as fully and effectively as possible.

(c) Improve the quality of communication service to the users. In the past, frequency shortages and channel congestion have resulted in marginal service in terms of waiting time, message blockage, and, importantly, inability to establish new systems to accommodate new requirements. With sufficient spectrum and with the wide range of system designs, particularly the "trunked" systems we seek to foster, users will be able to obtain better quality service, not only in the immediate future but also in years ahead when the 900-MHz band will be fully populated with radio communication systems.

(d) Result in lower costs. Lower costs should come about through production of equipment and systems on a large scale and from the competitive forces of the market place. Also, with a large range of options available, through open entry, a user will be able to negotiate and obtain only those facilities which he needs and thus avoid the additional costs inherent in standardized systems.

(e) Be more responsive to the great variety of needs and requirements in the private dispatch service. In these services, there are large systems, small systems, high-powered systems, low-powered systems; "in plant" facilities; area-wide and state-wide systems, in-hospital and ambulance-to-hospital systems, digital systems, tone control systems, slave locomotive control systems, remote control systems for cranes and other heavy machinery, portable systems for police and fire departments, inter-system police systems, and many others. A competitive market, with open entry, should be more responsive to these varying kinds of needs of the users, in that, if a desired system is not available from one source, other sources will be there to supply it.

(f) Provide the flexibility needed in the dispatch field. The private dispatch field requires the "flexibility" inherent in a competitive market. With "flexibility" an individual user will be able to arrange or negotiate for the specific communication facility that will fit uniquely his particular requirement.

(g) Enhance the development of new communication techniques. New techniques, such as automatic vehicle location, telemetry, facsimile, status reporting, digital access to computers from mobile units and others are now in the process of being perfected and are expected to be important adjuncts to voice communications at 900 MHz. Free market entry will encourage the full development of these new techniques; and this will not only benefit the users, but it will lead to more efficient spectrum utilization.

Summary

77. On reflection, our experience in the regulation of the Domestic Public Radio Services shows that, in conjunction with common-carrier-type regulation, unconscionable delays have resulted in making facilities available to the public without identifiable public benefits (such as

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lower costs to the users) for these delays. Moreover, the carriers, rather than meeting the requirements of private dispatch users, have concentrated on offering "radiotelephone" and one-way signalling services. Also, we are not dealing here with anything approaching a "natural monopoly" situation which might justify common-carrier-type regulation. Rather, we now have sufficient spectrum to enable us to authorize a significant number of competing SMR's in each market in the private dispatch field. In brief, we have not discerned any necessity for, or any benefit to be derived out of, common carrier regulation for our SMR option.

78. The record in this proceeding shows, and we find, that competition among SMR systems is reasonably feasible from technical and economic points of view and will serve the public interest. While courts have concededly imposed special strictures on our use of competition as a regulatory tool in businesses with a natural monopoly structure (see *Hawaiian Telephone Company* v. *FCC*, —— F. 2d —— (D.C. Cir. 1974)), it has never been held, nor, indeed, even suggested that the Commission could not opt for a competitive approach in the presence of a record adequate to show the feasibility and public interest basis of such action. On the contrary, as the Supreme Court made clear in *RCA, supra,* adequate public interest findings will support a policy of competition *even in* natural monopoly situations.[41] In contrast to the *RCA* and *Hawaiian*

[41] "We think it not inadmissible for the Commission, when it makes manifest that in so doing it is conscientiously exercising the discretion given it by Congress, to reach a conclusion whereby authorizations would be granted *wherever competition is reasonably feasible.* This is so precisely because the exercise of its functions gives it accumulating insight not vouchsafed to courts dealing episodically with the practical problems involved in such determination. Here, however, the conclusion was not based on the Commission's own judgment but rather on the unjustified assumption that it was Congress' judgment that such authorizations are de-

Telephone cases, this aspect of the present Docket does not involve a natural monopoly. The weight of the evidence supports, and therefore we find, that economies in this business would not reflect the increasing returns of scale that are the hallmark of the natural monopoly.[42] Without conceding, therefore, that it is necessary for us specially to find here that competition would be in the public interest—in light of the national policy favoring competition—such findings have nonetheless been made on the basis of the record evidence. Accordingly, nothing in *RCA* or *Hawaiian Telephone* would bar the action we have taken. See *Washington Utilities & Transportation Commis-*

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sirable. Cf. *Texas & Pac. R. Co.* v. *Gulf, C & S. F.R. Co.*, 270 U.S. 266, 277."

"In reaching a conclusion that duplicating authorizations are in the public interest wherever competition is reasonably feasible, *the Commission is not required to make specific findings of tangible benefit. It is not required to grant authorizations only if there is a demonstration of facts indicating immediate benefit to the public.* To restrict the Commission's action to cases in which tangible evidence appropriate for judicial determination is available would disregard a major reason for the creation of administrative agencies, better equipped as they are for weighing intangibles 'by specialization, by insight gained through experience, and by more flexible procedure.' *Far East Conf.* v. *United States*, 342 U.S. 570, 575. In the nature of things, the possible benefits of competition do not lend themselves to detailed forecast, cf. *Labor Board* v. *Seven-UP Co.*, 334 U.S. 344, 348, but the Commission must at least warrant, as it were, that competition *would serve some beneficial purpose such as maintaining good service and improving it.* Although we think RCAC's tention that an applicant must demonstrate tangible benefits is asking too much, it is not too much to ask that there be ground for reasonable expectation that competition may have some beneficial effect. Merely to assume that competition is bound to be of advantage, in an industry so regulated and so largely closed as is this one, is not enough." *RCA* case, *supra*, at pp. 96-97. (Emphasis supplied.)

[42] It is, of course, the natural monopoly character of public utilities that makes them especially suitable subjects for common-carrier regulation.

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sion v. *Federal Communications Commission,* —— F. 2d —— (9th Cir. 1975).

Impact of SMR Systems on Existing Radio Common Carriers

79. The Radio Common Carriers have argued that licensing SMR systems on a non-regulated basis would not be in the public interest, because this would lead to "destructive" competition between "regulated" and "non-regulated" entities. After full consideration, it appears to us that the carriers' fears are not well founded.

80. First, as we have described above, the private dispatch market is primarily a competitive one. Indeed, the carriers have not, to any significant degree, served the specialized requirements of eligibles in the Public Safety, Industrial, and Land Transportation Radio Services. Their offerings have been principally confined to radiotelephone and one-way signalling. Moreover, the land mobile communications market, radiotelephone and dispatch, is expanding. Indeed, the main basis for our decision to allocate substantial new spectrum was our determination that there are present mobile radio communication requirements which, because of spectrum shortages, are not being met, and that these requirements will continue to grow and to expand in the foreseeable future. It follows, we feel, there will be no demonstrable impact on the function and service offered by the RCC's.

81. Our action in authorizing SMR systems need not be viewed by the radio common carriers as one that limits or restricts their business potential. Quite the reverse, in addition to their existing service, the RCC's will be entirely free to participate in the new 900-MHz private dispatch market. Moreover, we anticipate that they will use their organization and accumulated marketing and engineering expertise to play a major role in the establishment of both "trunked" and "conventional" facilities at 900

MHz. Thus, in view of the opportunities they will have for future growth, today's action is by no means inconsistent with the interests of the radio common carriers.[43]

Federal Preemption

82. In the *Second Report and Order,* we emphasized that the 30 MHz of spectrum space we allocated to the Public Safety, Industrial, and Land Transportation Services was made available as part of a comprehensive allocation plan under which frequency assignment, technical standards, and our operational rules are to apply nationwide. Moreover, each channel assignment will control where the next may be made, without regard to state boundaries or varying local jurisdictions. In these circumstances, we said, the methods which potential users may employ to make use of radio frequencies must also be compatible on a nation-wide basis. If they were not, we stressed, we would be unable to achieve our goal of bringing efficient, effective, and low-cost communications to the public. We still hold this view.

83. In this connection, our express responsibility under Section 301 is to assure that the radio spectrum we have allocated to these services at 900 MHz is used effectively and efficiently. Thus, we developed separation standards designed to control where channels already assigned may be reused, as well as loading standards to assure the degree of channel efficiency that must be maintained. Further, our plan requires us to make specific frequency assign-

[43] It is also worth pointing out that private radio systems, including systems operated under various sharing arrangements, have existed for many years; and while claims and forecasts of "dire" economic consequences have been made by the carriers, none have materialized. See *Allocation of Microwave Frequencies Above 890 Mc/s, Report and Order,* Docket No. 11866, 27 FCC 359 (1959); *reconsideration denied,* 29 FCC 825 (1960); and *Cooperative Sharing of Operational Fixed Stations, Report and Order,* Docket 16218, 4 FCC 2d 406 (1966).

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ments to applicants as their proposals are received and reviewed; to determine whether, at specific points in time, frequency loading criteria are being met; whether persons requesting permission to use facilities are eligible (possess the necessary qualifications) to do so; and whether, in a given case, an additional channel or channels should be assigned (under controlling regulations) based on the use made of prior authorized stations.[44]

84. Moreover, we made it clear that our 900-MHz plan called upon us to exercise continuing supervision over all phases of "use," that is, how authorized systems are being employed (operational methodology); by whom; for what purposes; and in what ways. In this regard, we required the submission of a continuing series of reports to keep us apprised on matters that would enable us to make our plan work in a way that would maximize the benefits to all users and at the same time maximize spectral efficiency.[45]

85. In addition, the planned 900-MHz systems will not necessarily be confined to those serving the needs of "local" users. There will be many of this type. But there will clearly be many more that will extend for many miles, traverse one political subdivision of a state and then another, and go from state to state. Thus, systems licensed to motor carriers, to railroads, to power and petroleum companies will not necessarily be, and generally are not, confined to one state or one jurisdiction. Accordingly, the plan does not contemplate *per se* intrastate operations. It is a national plan, with national ramifications; and in no instance will we be able to forecast what dimensions a particular system may take on. Those matters will depend upon a variety of factors and considerations; and our decision in each instance must be based on our measure of

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[44] *Second Report and Order, supra, fn.* 2, at p. 766.

[45] *Second Report and Order, supra, fn.* 2, at pp. 781-782.

what the public interest requires in terms of the purposes and objectives sought to be attained through assignment and licensing of stations under the referenced 900-MHz regulatory plan.

86. In summary, then, our 900-MHz allocation scheme is an all encompassing one designed to meet the specific and particular requirements of persons we will license under regulations governing the Public Safety, Industrial, and Land Transportation Radio Services. It has been perfected by us to meet the specific and particular requirements of these defined classes of eligible users, not on a local, but on a national basis, wherever the eligible may be, without regard to state or local jurisdictional boundaries and limitations. In these circumstances, we think it is obvious that implementation of the plan must be under one direct authority. In short, centralized federal licensing is indispensable to the ultimate effectiveness of the measures we have adopted to control the use of the spectrum at 900 MHz and to ensure that it is fully and efficiently employed.

87. On this point, we take notice of various state and local franchising or licensing procedures which may impede the basic goal of our allocation to SMR operations. Indeed, the common carrier interests assert that such state or local limitations are properly the case. Since these existing and potential barriers are inimical to our licensing and allocation scheme, federal preemption of those functions is necessary to achieve the full and efficient use of the 900-MHz allocations.

88. We have, of course, reviewed the arguments of various parties that SMR's are "common carriers" under the Act, and that Sections 2(b) and 221(b), therefore, preclude Commission preemption of any State regulation. However, we find these arguments both misplaced and premature. Irrespective of whether SMR's could be considered "common carriers" under Sections 2(b) and 221(b), those provisions are expressly subject to the Commission's Section

301 allocation responsibilities. The extent of our preemptive action today is confined to assuring—through centralized federal licensing—that the goals of our allocation program are realized. Indeed, we note that the "licensing" or "franchising" functions are not among those reserved to the states even with respect to common carriers subject to Sections 2(b) and 221(b). Thus we are unable to perceive why or how our action should be viewed in conflict with our expressly mandated duty to license radio communication facilities. 47 U.S.C. Section 301.

89. In sum, we feel that federal preemption of possible assertion of state entry certification over SMR's is essential to accomplishing the objectives of our 900-MHz allocation plan. In this regard, we have noted that rate-structured, common-carrier-type regulation is inconsistent with the free-market, competitive environment we feel is necessary to promote the full potential of our allocation of the spectrum to the Public Safety, Industrial, and Land Transportation Radio Services. Nevertheless, in this connection we need not assume that the states will adopt such burdensome regulatory measures on SMR licensed systems. Indeed, it is our hope and anticipation that the states will follow our lead towards a free, competitive environment for the SMR systems. Accordingly, while we are preempting jurisdiction over questions of entry, we have decided to defer judgment as to any action by the states relating to the regulation of other aspects of SMR operations.

VI.

Petition for Stay

90. The National Association of Radiotelephone Systems (NARS) has filed a petition requesting that we "stay" our decision in the *Second Report and Order* in this Docket "until final determination of Petitioner's appeal to the United States Court of Appeals for the District of Columbia Circuit . . . and, alternatively, suggests

that the Commission on its own motion suspend the effective date of its Order until further order to be issued after determination of all court appeals and petitions for reconsideration and proceedings consequent upon the foregoing."

91. In support of the relief asked, NARS alleges that its members are "suffering and will suffer irreparable injury as a result of the Commission's Order;" that the public "is irreparably injured by the disruption of the service of the RCC's even prior to the implementation of the Order;" that our decision ". . . is clearly unauthorized by the Communications Act" and contrary "... to clearly applicable court decisions and is sharply at odds with the Commission's own past decisions and policies." Further, NARS contends that our decision ". . . cannot be implemented for at least two years, and suspension of the effective date . . . will not substantially injure any of the parties." The relief asked will be denied.

92. Petitioner, NARS, has not made a showing sufficient to justify the stay or the total suspension asked in the implemention of this highly important decision. We want to emphasize that our decision, here, is the result of a more than 15-year effort both by the Commission and by all interested elements of the land mobile industry to resolve land mobile frequency problems by the allocation of additional spectrum in all of the land mobile radio services and by making this spectrum available at the earliest possible time. We have been involved in this effort, here, since 1968, nearly seven years; and it is vital that we bring this matter to a close as expeditiously as possible and thereby make the frequencies we have allocated for use in establishing important and essential communication systems available without further delay. In this context, the delay asked would clearly be detrimental to the public interest, convenience, and necessity.

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93. The claims of injury made by NARS are, in our view, speculative; and pertain to the private interests of NARS' membership. They certainly are unwarranted particularly in view of our action in this case under which petitioner's members are given a full and complete opportunity to participate in the implementation of our plan for the development of our new 900-MHz allocations.

94. Further, as we have explained, we believe that our decision is consistent with the requirements of the Communications Act and controlling decisions. Therefore, we cannot agree with NARS's assertion that it will prevail on appeal. Nevertheless, implementation of our decision could not deprive petitioner's members the relief they ultimately seek, should NARS prevail on appeal.

95. As we mentioned in our *Second Report and Order*, in the private dispatch field, relative to the 30 MHz made available to the Public Safety, Industrial, and Land Transportation Radio Services, we have set aside 300 of the 600 channel pairs to give us flexibility in carrying out our assignment and licensing policies in accordance with such requirements as develop in the future. Further, we have "reserve" spectrum of 45 MHz; and, therefore, we have the frequency resources to permit us to adjust to any future occurrence.

96. In addition, the SMR system option, to which NARS's argument in principal part is directed, is an alternative (demonstrably an important one) we have given to eligibles in the Public Safety, Industrial, and Land Transportation Services for obtaining the facilities needed in carrying out authorized licensee activities; and our new rules are fashioned in a way that, in the event the courts decide that our decision with respect to this option is not one we have the power to make, appropriate adjustments in our plan may be made. We want to be clear on this, our primary objective in the private dispatch

field is to ultimately provide frequency resources and an effective regulatory approach to assure that the communication needs of the Part 89, 91, and 93 services are met. There is no challenge to our authority to license systems in these services in the manner in which this has been done in the past; and our allocation and assignment scheme is designed to permit us to go forward with this aspect of the plan regardless of whether the SMR option is retained in its present form or not.

97. Finally, the issues raised in this proceeding are severable. Thus, our decision on "cellular" systems and on general allocation matters, and also with respect to the allocation of 30 MHz to the private services, 40 MHz for "cellular" operation, and 45 MHz for "reserve" purposes, while generally a part of our overall plan for implementing our 900-MHz decision, is aimed at separate objectives which are severable and distinct. Any changes in the decision as to one of the elements need not affect, in any essential way, our decisions with respect to the others. In any event, assuming that the courts decide that we do not have the requisite authority to license SMR systems in the manner outlined in our decision, the remaining options we have provided for persons eligible in the Public Safety, Industrial, and Land Transportation Radio Services (namely, individual licensing and "shared" systems as to which no questions have been raised) may be implemented. Put another way, any changes or modifications as to one of the features of our overall plan need not affect our decision with respect to the others. In this connection, as we have just noted, we have retained sufficient flexibility with our 300-channel, 45-MHz reserves to permit us to make such adjustments as may become appropriate or necessary.

98. Accordingly, we see no justification for the delays that would result from granting NARS the relief it asks. Therefore, its requests are denied.

VII.

Other Petitions

99. A "Petition to Intervene" was filed by General Communications Engineering, Inc., asking that it be permitted to "intervene" in this proceeding and to present "comments" and "views" directed chiefly to certain alleged activities of Motorola Communications and Electronics, Inc., a subsidiary of Motorola, Inc., a manufacturer of land mobile radio equipment. This, of course, is not an adjudicatory proceeding; and "petitions to intervene," as such, are not applicable. Petitioner could have participated in this proceeding either at the comment stage or later during the statutory period established for reconsideration. Furthermore, the matters to which petitioner addresses itself are the subject of court action; they are not directly pertinent to the overall allocation and assignment plan with which we are dealing, here; and they could only relate to the qualifications of one of many possible potential applicants for 900-MHz licenses. Moreover, as we have indicated, it would be plainly in conflict with the public interest to delay implementation of our decision to go into the matters which petitioner has in mind. Therefore, the petition is denied.

100. The National Association of Radiotelephone Systems (NARS) has filed a "Supplement to Petition for Stay: Motion to Set Aside Previous Order; and Motion to Reopen the Proceeding and to Hold Evidentiary Hearing Before Full Commission." In this connection, it has also filed a "Motion for Leave to File Additional Pleading."

101. The principal ground for the relief asked was the recent filing of a "complaint" by the Department of Justice in the case entitled "*United States of America* v. *American Telephone and Telegraph Company et al.*, in the United States District Court for the District of Columbia.

In its petition, NARS asks us to reopen the record and examine anti-competitive aspects of licensing manufacturers. The issues involving possible anti-competitive practices by wire line companies and by manufacturers were fully considered and measures were taken to safeguard against them. This has been done in our *Second Report and Order*, and we have further modified our plan in this decision. In view of the actions we have taken, directed to this subject, the relief asked is not warranted. Certainly an evidentiary hearing is not required; and, furthermore, as we have pointed out, the parties have had many years and many opportunities to develop their views in opposition to our plan on this and on other aspects, as well; and we can see no justification at all in granting relief that would result in additional long delays in making the frequencies available for use in land mobile systems of communication. Accordingly, NARS's additional requests for relief, referenced above, are denied.

VIII.

Technical Considerations Pertaining to Allocations and Assignments in the Public Safety, Industrial, and Land Transportation Services

102. The parties have raised a number of questions on technical points. Some say our classification of stations as urban-conventional and suburban-conventional is not practical. They feel that while the distinction might be useful in making assignments in certain parts of the country, it does not fit, for instance, the geographic characteristics of the Los Angeles urbanized area. There, the requirement is to serve broad areas, using mountain-top sites which ring populated centers to the west. With the antenna height and power limitations prescribed, they feel this will be impossible. Accordingly, they ask that we drop the suburban-conventional classification entirely. However, if this is not done, they want us to correct or make clear

just how the suburban-conventional and urban-conventional mileage separations are to apply.

103. Other parties ask that we not limit system configuration to "trunked" or "conventional" modes. They want to be allowed to use satellite receivers and transmitters to enhance coverage. This is of particular importance in hilly or mountainous regions and even in metropolitan areas where high buildings and other types of structures will shadow or block effective propagation of 900-MHz signals.

104. Also, they request that we clarify our intent as to permissible use of emissions such as F-2, F-4, and F-9. Further, they suggest that frequency stability requirements for "control" stations be made the same as those applicable to "mobile" transmitters and that the 250-watt limitation on base station power be modified, so that base station equipment can more readily be designed and manufactured to produce maximum permissible effective radiated power (ERP) of 1 kilowatt. Others ask that we revise the "temperature range" requirements for base stations, so this gear will be less expensive to produce.

105. Further, some parties would like us to simplify the method prescribed for computation of AAT (antenna height above average terrain) or to undertake to make the necessary computations ourselves. Then it is urged that use of the 900-MHz band by land mobile licensees be restricted to urban areas, leaving UHF-TV translator stations free to operate in the 900-MHz band in rural areas, where less land mobile congestion exists.

106. It is pointed out that we have not made adequate provision for the requirements of "ribbon-type" user—railroads, motor carriers, certain utility enterprises, and some police operations. Modifications to accommodate these eligibles are sought.

107. Finally, it is said that fixed operation on a secondary basis should not be prohibited; that mobiles should be allowed to operate on base station frequencies; and that mobile units should be permitted to act as mobile repeaters, where that type of operation is required in the conduct of authorized activities or functions of the licensee.

Matters Relating to Spacing and Design of Conventional and Trunked 900-MHz Systems

108. The parties have raised questions concerning the methods set out in the rules for assigning frequencies in urban and suburban areas and for loading conventional and trunked systems. They urge that more efficient engineering methods could have been employed; and that fuller use of the spectrum could have been attained through case-by-case engineering of station authorizations and through channel monitoring and spectrum management techniques.

109. We are, of course, aware of the techniques mentioned; and our spectrum management program in Chicago is designed to develop and perfect the approaches suggested. However, our methodology, here, is, in terms of our present capabilities, the most appropriate to assure maximum effective use of the new frequencies. In this regard, we plan to require a relatively high level of channel occupancy; to exercise continuing supervision over channel use, thus assuring compliance with our loading criteria; and to assign channels so that they meet the specialized requirements of the various classes of users in accordance with traditional priorities accorded them.

110. Further, the mileage separations for trunked and conventional operations have been established giving full consideration to accepted standards of good engineering practice. The separations specified are designed to assure that only reasonable protection from co-channel interfer-

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ence is accorded the users; and these separations, in our view, are necessary to afford the grade or quality of service that 900-MHz systems must have, if sufficient interest is to be generated in them to justify the additional expense of operating at this range.

111. Moreover, we have said that we will revisit all of the system parameters as we gain knowledge from actual operating experience; and that adjustments will be made as it becomes possible to do so. This is one of the objectives of our Chicago Spectrum Management Program. Nevertheless, we agree with some of the suggestions; and we are making such changes in our assignment methods as seem feasible at this particular time.

112. In the latter regard, where a licensee cannot cover his desired service area from a single transmitting site, we will permit the use of multiple sites, just as long as the combined signal contours of all the sites do not exceed our basic 40 dBu/20 mile limitation. We believe that multiple sites will introduce a significant degree of flexibility in system design, allowing licensees to fill dead spots and overcome other system deficiencies.

113. Further, with respect to trunked and conventional systems located in the Los Angeles area, we believe a departure from our basic urban/suburban licensing scheme is warranted. The very large geographical area of urban Los Angeles and its many suburbs and the presence of several very high mountain-top sites present circumstances which we believe are unique. Accordingly, when an applicant demonstrates a need to serve both the urban and surrounding suburban areas, we will permit him to utilize an ERP of 1 kilowatt on certain nearby mountain peaks. The effect of this action will be to extend the radius of coverage for these stations, enabling them to serve a significantly greater portion of the entire area than standard trunked or conventional systems. Such stations will be designated as "wide-area-coverage" stations, and will be

the only ones permitted to use 1 kilowatt ERP with an antenna height above average terrain exceeding 1000 feet.[46]

114. In addition, we have taken into account the requirements of certain classes of users for ribbon-type systems. It is not our intention to exclude such systems; and we believe that our rules have sufficient flexibility to permit this type of operation. Thus, in considering applications for such systems, we will examine each proposal as a whole, rather than on an individual station basis; and we will authorize systems of this kind as long as licensing them is found to be consistent with the basic governing technical and frequency use standards we have adopted for 900-MHz facilities.

Emissions

115. In their petitions, several parties pointed to the important role which non-voice communications can play in modern communication systems, and they have asked that provision be made for authorizing such methods of operation at 900 MHz. We recognize the potential of non-voice communications; and we plan to accommodate such uses when it is possible to do so. For this purpose, we will initiate studies, and to the degree necessary rule making, to develop the necessary policies and system loading parameters under which such methods of operation may properly be authorized on a regular basis. In the meantime, we have allowed for use of these techniques to the extent practicable, as our rules now provide. Thus, systems li-

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[64] We are taking a very practical approach here to the special situation presented in Los Angeles. If similar extenuating circumstances should become evident in other localities, we will address them at a later date. Further, these facilities will be authorized to those who have wide-area-coverage needs. In addition, such facilities will be authorized for SMR operations only where their use will be restricted to providing wide-area-coverage for persons with that kind of coverage requirement.

censed in this band for use by a person or entity eligible under either Part 89, 91, or 93 may be used for the transmission of F2, F4, and F9 emissions, provided that the loading standard which applies to the system is met and the channel pairs are assigned for the exclusive use of the licensee: See Section 89.655(c) at Appendix B.

116. For systems operating in the trunked mode, we will construe the assigned F3 emission designation to include transmission of non-voice signals on a calling channel used for the purpose of establishing and maintaining communications within the trunked network.

Frequency Stability for Control Stations

117. We have been asked to change the rules to allow control stations to have the same frequency stability as that which we have prescribed for mobile stations. It is pointed out that although control stations may technically be termed "fixed stations," they operate on mobile frequencies working through mobile relay stations; and it is suggested that they should not be required to meet more stringent stability requirements than mobile units. We agree with this view; and, therefore, the stability requirements for control stations have been modified, accordingly.

Base Station Transmitter Power Output Limits

118. Transmitter power output limits were specified for stations in the 806-821 and 851-866 MHz bands in order to facilitate type acceptance procedures for equipment to be used in those hands. The limit specified in the rules is 250 watts for base stations. It is contended that this limit is not adequate for multiple transmitter groups used in trunked systems. It is said that the losses involved in combining the output of numerous transmitters to feed a single antenna could be substantial, and that a higher limit is needed in order to achieve 1 kilowatt ERP per frequency. We agree that such combining losses could re-

duce power output on the order of 3 to 6 dB, or more, depending on the particular hardware used. Additionally, we recognize that at 900 MHz antenna feedline losses could become very significant, on the order of 5 to 10 dB, in those installations where long runs of feedline are needed. Such feedline losses would affect the ability of both trunked and conventional stations to achieve 1 kilowatt ERP per frequency. We are therefore revising the maximum permissible transmitter power output to a limit of 2000 watts per frequency. This does not alter the maximum permissible ERP, which remains at 1 Kilowatt per frequency.

Temperature Range Requirements for Base Station Frequency Tolerance

119. The rules presently provide that base station frequency tolerance in the 851-866 MHz band must be maintained to 1.5 parts per million. Type acceptance provisions of Part 2 require tolerance to be maintained over the temperature range from —30°C to 50°C. It is asked that this temperature range be reduced to 0°C through 50°C for base stations. The wider temperature range, it is said, would present serious manufacturing and cost problems. However, narrowing the temperature range would have the effect of shifting some of the burden of maintaining adequate frequency tolerance from the equipment supplier to the equipment user. We are aware of the ramifications mentioned; but these standards apply to equipment used in other bands. Thus, the problem is one that is not within the scope of this proceeding; rather, it can best be handled in rule making directed more specifically to it.

Calculation of Antenna Height Above Average Terrain

120. An application for frequencies in the 806-821 and 851-866 MHz bands must include the base station antenna height above average terrain. It has been suggested that

the Commission should perform this calculation. As desirable as this goal might be, we are not now in a position to assume that burden. We recognize that some cost to the applicant is involved; however, this cost is very small when compared to the other costs involved in getting a communication system into operation, and we do not feel that it is unreasonable to require applicants to furnish this information.

Secondary-Fixed Operation/Mobile Units on Base Station Frequencies/Mobile Units as Mobile Repeaters

121. Concern was expressed over our apparent exclusion of secondary fixed operations from the 806-821/851-866 MHz bands; and over the failure to allow mobile units to act as mobile repeaters and to permit mobile units to operate on base station frequencies. First, it was not our intention to exclude such operation completely. Rule Section 89.655 does make provision for all three of these modes of operation, provided they are consistent with existing rules governing the service in which the licensee is authorized to operate, and provided that the applicable loading standards are met and the channel assigned has been made available for the exclusive use of that licensee.

122. Where a channel or channels are time-shared among two or more users, secondary fixed operations, mobile repeaters, and mobile units on base station frequencies will not be permitted. On these channels, the potential for inter-system interference and disruption of conventional base/mobile communications could be significant; and we are not going to allow such operation at this time.

Use of the 806-821 and 851-866 MHz Bands in Rural Areas

123. We have been asked that we not permit land mobile systems to operate in the 806-821 and 851-866 MHz bands in rural areas. The purpose of this request is to avoid possible interference with TV translator stations

operating on those frequencies. We do not believe that such restrictions should be imposed. We have considered this particular matter in prior proceedings; arrangements to deal with this matter have been worked out; and we do not feel we should disturb our decision on this point.

Mileage Separations

124. Some parties have asked that we clarify the mileage separations specified in Section 89.751 of the Rules. Accordingly, the provisions of this rule have been revised to simplify the criteria that are to apply in assigning channels for use in "trunked" and "conventional" systems. We have also revised the mileage separations slightly to reflect certain factors which we believe should be included in the determination of the controlling separations. In addition, we have included separate provisions which take into account the special conditions that obtain when suburban-conventional and urban-conventional stations are interfaced. Finally, as we have mentioned, we have decided to treat the Los Angeles area as a special case, but with reference solely to the four transmitter sites specified at Section 89.751(b)(1) and (5) of the Rules; and we have added a provision to cover situations where stations on those sites are interfaced with other "trunked" or "conventional" systems. We believe that with these changes there should be no confusion as to what the applicable separation criteria are.

IX.

Miscellaneous Matters Pertaining to the 900-MHz Allocation and Assignment plan for Public Safety, Industrial, and Land Transportation Services

125. Concern has been expressed about our statement that a 40 dBu signal contour of approximately 20 miles from the base station would provide "a high quality signal to about 50 percent of the locations, 50 percent of the

time." It is pointed out that public safety entities "have a unique need for immediate and reliable communications," and that if our statement is to be taken literally, then the 806-821 MHz and 851-866 MHz bands will have a very limited usefulness to public safety licensees. To allay these fears, we believe that a fuller explanation of the propagation standards we used is in order.

126. The strength of a radio signal is a probability function involving spatial and temporal variability. For an observer at a fixed location, signal strength will vary with time, and for an observer in motion, signal strength will be a function of his particular location at a particular time. When empirical studies are done to ascertain signal strengths, observations and calculations are made to determine, for a given range of time and locations, what distribution of signal strengths occurs. A notation of the form F(L,T) is assigned to each data point or set of data points, with the symbol 'L' representing the location variability percentage, and the symbol 'T' representing the time variability percentage. The three most commonly used notations in our R-6602 propagation curves are F(50, 50), F(50,10), and F(50,90). In all three cases, the location variability percentage is 50 percent, meaning that the median signal level at 50 percent of the locations on the perimeter of the service area will equal or exceed the value under consideration, and the median signal level at the remaining 50 percent of the locations of the perimeter of the service area will be equal to or less than the value under consideration. The three time variability percentages, 50 percent, 10 percent, and 90 percent, indicate that the signal strength under consideration will be exceeded for 50 percent, 10 percent, and 90 percent of the time, respectively, at 50 percent of the locations on the perimeter of the service area.

127. The percentage figures used are standard notations and not to be interpreted literally. We were simply noting

the statistical variabilities which are inherent in the specification of any signal level. For a system engineered to provide a signal level of 40 dBu F(50,50) at the perimeter of the service area, greater and lesser signal values will be repeatedly encountered within the service area. Clearly, however, the mean signal level within the service area will be greater than 40 dBu, and will tend to be inversely proportional to the distance (raised to the fourth power) between the mobile unit and the base station. Assuming a receiver sensitivity of 0.45 microvolts to produce a 12 dB SINAD signal at the mobile unit, a useable signal should be received by mobile units operating in 95 percent of the service area for 95 percent of the time. We expect that users will have no difficulty meeting their communication needs under these conditions. In fact, these values represent a considerable improvement over service generally available in systems licensed in other land mobile bands.

Construction and Loading of "Conventional" Systems

128. Objections were made to the period prescribed for loading "conventional" systems. Also, a question was raised as to the construction period for "conventional" systems. We had included none. The reference, here, is to Section 89.802(c) of the Rules. The provision as it stands is consistent with the philosophy of regulation we have adopted for 900-MHz systems under which we have sought to insure that the channels which we make available to eligibles are put in "use" and not put in "storage." For this purpose, we have made it mandatory that the channel or channels assigned be "occupied" in accordance with express loading criteria or, if they are not, they become available for assignment to other users. These assignments are to be made by us; and all licensees should understand (and we have made it abundantly clear) that they take their authorizations subject to this condition. Furthermore, the period of eight months is consistent with that specified at Section 1.932 of the Rules. For these reasons, and for

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those which we have previously expressed, this requirement will not be changed.

"Five Channel Limit" for Conventional Systems

129. Some parties have asked that we abandon the mandatory limit on the number of channels we will permit for use in the "conventional" system mode. These parties feel that there should be no such limitation; rather, that each case should be evaluated in terms of the showing of need made by the applicant. On this, we have emphasized the importance of "trunked" systems in terms of maximizing spectral efficiencies. On the other hand, we have recognized the value of "conventional" operation for smaller systems; and we selected the five channel limitation only after much thought. It strikes a good balance, in our view, between when "conventional" operation is desirable or needed and when "trunking" becomes feasible and where the inherent advantages of "trunking" come into play. Accordingly, we will not modify our plan in this regard at this time.

130. Nevertheless, some clarification as to how we are going to assign channels for "conventional" use is in order. As our rules provide, applicants must meet our loading criteria. Thus, where an applicant can meet the loading standards for a facility in the Police Radio Service, as an example, he will be assigned a channel pair, if he certifies that the assigned channel will be loaded to 70 percent of the required 50 mobile unit specification. See Section 89.802 of the Rules. This means that within a period of eight months, he must have in operation 35 mobile (vehicular) units. Should that licensee find that his requirements have exceeded his expectation and his assigned channel becomes loaded to 90 percent of its specified capacity, he may then apply for an additional channel. In contrast, should the applicant be a relatively large police department, it could request a maximum of 5 channels for use in "conventional" mode; but that would be the limit. If there

should be a need on the part of this applicant/licensee for additional facilities for use in his police operations, then his system must go over to "trunked" operation.

131. On this point we should say that where the applicant is a local government entity that requests radio facilities for functions other than "police" operations, say for its fire or its highway maintainance departments, then it can apply for conventional systems for these distinct purposes. However, if the system is to serve, as it can in the Local Government Radio Service, all municipal functions or a number of them, then the applicant/licensee must look to "trunking" to meet these kinds of communication requirements. But we are not saying that where a licensee has functions which are related, yet are conducted independently, either in terms of the "function" being carried out or geographically, that he is bound by the five channel limit. Common sense must come into play; and we will exercise informed discretion in cases of this kind, obviously.

132. A further point in clarification is asked concerning SMR system licensing. First, our intention is that where an SMR licensee provides facilities for an "individual" eligible user, then the SMR licensee will stand in the shoes of that user; and what we have just said, above, relative to "conventional" system operation will apply.

133. A second situation arises where an SMR licensee plans to provide physical base station facilities to a number of eligibles in any of the service groups or combination of groups set out at Section 89.802 of the Rules, then the five channel limit applies for that particular market. Thus, when an SMR licensee needs additional channels (over five) in that market, the system must be "trunked." We have given the reasons why. They pertain to spectral efficiencies we expect to attain at 900 MHz.

134. The next logical question, one that has been asked, is what is a "market." This needs some clarification. We

had originally thought of a "market" as being the established "Urbanized Areas." However, this has given some of the parties concern, for these "areas" are constantly changing; and further there is some question as to the usefulness and the appropriateness of such an approach for our purposes. On reconsideration, we feel that a more definite criterion is needed; and we think this should turn on station coverage.

135. In this connection, suburban-conventional and urban-conventional facilities, those which we authorize for operation with maximum facilities, are designed to provide a 40 dBu signal at approximately 20 miles from the location of the base station transmitter. Los Angeles is an exception; but the same principle we are developing, here, would apply. In these circumstances, one method of defining a market would be this service area. It would include over 1,000 square miles; and this is a relatively large area. Accordingly, it would seem that we could reasonably adopt a definition of the term "market" to preclude licensing of more than five channels (for use in "conventional" mode) in that area. But this would not give the licensee a choice of establishing separate single-channel systems or a single five-channel system in that "market" or "area," simply because there would be no reference point, save in the instance in which the single five-channel method of operation was employed. Thus, to retain this flexibility in station location, we have decided to define a "market" as that area encompassed by the 40 dBu contour of a conventional facility using maximum permissible power and antenna height. However, where the licensee of an SMR system has specific multiple locations, he may not establish a second five-channel conventional station, if there is any overlap of the 40 dBu contour of the proposed new facility and any of the 40 dBu contours of stations previously authorized to him. In other words, we are going to look to every conventional system licensed to an SMR entity in determining whether an additional conventional channel is

to be made available for his use, so that where a five-channel system is situated at a given point, then the next conventional station licensed to this particular licensee must be at least 40 miles distant.

"Ribbon" and "Large Area" or "Regional" Conventional Operations

136. We have previously said that we will look at proposals for "ribbon" type systems and at those used over "large areas" or "regions" as applications for a "system." There remains the question as to how our loading criteria are to apply. Again, we can understand the concern of the parties on this point, but it is obvious that there must be some measure of "common sense" or "judgment" in cases of this kind. Clearly, we did not mean to exclude users in this class from access to the 900-MHz channels. These users are ones engaged in very important activities, e.g., railroad, motor carrier, state police, and petroleum operations and like functions. These eligibles employ a number of base stations situated, at times, along their "right-of-way," or at different strategic points within a state or a region, or over several states and in several regions. They have requirements such that their emergency units or their trains and trucks traverse large areas (or along long routes) and they must communicate with a number of base stations along the way. In these circumstances, application of the loading criteria will conform to the nature of the licensee's operation. Thus, we never intended, and we are not going to require now, that these eligibles justify the assignment of co-channel base stations on the basis of mobiles associated with any particular base station. The test, rather, will be one of reasonableness, with a showing that the channel will be used consistent with the loading prescribed.

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Construction and Loading of "Trunked" Systems

137. Modification of our rules governing the construction and loading of "trunked" systems is asked. Some of the parties feel that the "one year" construction period is too short. Others would like to be allowed to proceed with construction in "five-channel" stages, loading each five-channel group, first, and then proceeding with construction of a second five-channel group. On reconsideration, we have given much thought to this problem; and we can understand why it might be more desirable, from a capital investment point of view, to go forward slowly. As we understand it, a maximum power, "trunked" facility will cost something on the order of 2 million dollars, depending on a number of factors. Whatever this figure is, whether it turns out to be greater or less than this estimate, we further realize that the initial investment for the basic elements of the system which are required regardless of the number of channels will be proportionately heavy. Thus, should we permit licensees to proceed in five-channel stages, it is not likely that there would be any incentive not to go forward with completion of the system, as the greater the capacity it has, the greater will be the return on the investment. So we are disposed to go along with this recommendation. However, we still must emphasize that our objective, here, is to maximize spectrum efficiency and to get these systems established, because they are needed to achieve the degree of efficiency at 900 MHz we feel is desirable in terms of the public interest. Therefore, in reaching some balance between that objective and the monetary considerations mentioned, we are going to modify our loading requirement for "trunked" systems to specify that the licensee must show that the system is being developed and loaded so that we can reasonably expect that it will be in full use in the five year term. Thus, we will permit the licensee of a "trunked" facility which has been assigned more than the minimum five channels to proceed with construction as proposed, i.e., in five chan-

nel stages; however, the basic facility designed to accommodate a minimum of five channels in "trunked" mode must be completed within the one-year limit specified in the rules. Further, where the licensee elects to proceed in this fashion, he must show that his system is "occupied" to 70 percent of its capacity at the end of a period of two years from the date of the grant of his station authorization. If it is not loaded to this capacity, the unused channels may be assigned to others. On the other hand, if the licensee elects to proceed with construction of the total system, as prescribed at Section 89.801(a)(2), then the norms set out, there, will control.

Trafficking

138. Reference in the petitions has been made to the possibility of "trafficking" in licenses. In this regard, it is of concern that individuals with no intention of constructing or operating requested 900-MHz facilities will apply merely to be in a position to "sell" the authorization or, put in other terms, to "market" his "place in the processing line." This is of real importance, here, because we plan to process applications on a first-in, first-out basis; and in such circumstances, it is vital that all persons applying have a *bona fide* intention of implementing their authorization. Otherwise, these individuals would be in position to defeat our purpose of making these channels available as quickly as possible and of having them in "use" at the earliest possible date.

139. We have guarded against this kind of practice through our mandatory construction and loading requirements. But we feel that we should go further to preclude this possible abuse of our processes. Accordingly, we will not allow amendment of any application, whether for a "conventional" or a "trunked" system, to specify a "new" applicant. We will not consider the amendment as proposing a "new" applicant, where it involves an assignment or transfer of control to a parent or subsidiary of

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the same corporate entity; or where otherwise there is no substantial change in ownership or control of the applicant. This applies regardless of the nature of the legal entity. Thus, if the applicant is a partnership, the addition or substitution of "a" partner will be allowed, but only if the basic partnership structure remains unchanged.

140. Furthermore, once a license is granted, it may not be assigned nor may there be a transfer of control prior to the construction of the facility authorized. In this connection, the same basic policies that we have said will apply prior to a grant of a license for a "trunked" or "conventional" station will control. Finally, these prohibitions are not to be applicable in cases of "involuntary" transfers or assignments in cases of death or insolvency.

Cancellation Provision

141. There were some requests that we modify our provision on cancellation of contracts concerning the "leasing" of equipment from SMR licensees. The regulation in question provides that the user of an SMR system who elects to "lease" the equipment from the licensee of that station must be given the right to cancel the lease agreement at anytime, without penalty, on 10 days' written notice to the licensee. Section 89.656 of the Rules. The fear was expressed that this provision would impose great hardships on small companies and would enlarge undesirably on the ability of the larger companies to dominate the market.

142. This provision was designed to give eligible users mobility in the market to secure the best possible service at reasonable charges. We thought it necessary, because at this time it is not possible to compel such uniformity in equipment that would enable eligibles to use such gear as they had contracted for in other systems when the SMR service was not satisfactory. Further, the concept was to protect the small user; not larger entities that have inherent

bargaining power. And we can understand how some companies that might be interested in becoming SMR licensees would be totally discouraged, if they did not have the right to rely on a contract. Taking both views into account, we think a reasonable solution, one that meets our purpose, would be to make this rule applicable only in those instances where the lease arrangement involves 5 transmitting/receiving units or less. Accordingly, Section 89.656 will be so modified.

Clarification Asked on Other Points

143. A few other points in clarification will be discussed. First, there was some confusion as to when applications would be accepted for filing. On this, we will not accept any application until the new form we mentioned in the *Second Report and Order* has been approved through prescribed procedures. But we will give notice when the forms have been so approved; and this notice will be given reasonably in advance of the date we will specify for first filing of applications at 900 MHz.

144. The same problem exists with respect to "type acceptance" of equipment. The parties want to know whether they can file applications without specifying "type accepted" equipment. They would like to be given the opportunity of submitting their applications and committing themselves to use "type accepted" equipment in their stations. Should there be none, of course, the inference is that they would then request additional time to construct and load. We understand the nature of the problem; but we must go forward in accordance with accepted and established practices. Thus, if the equipment to be used is not "type accepted" then the application will not be accepted; and it should not be filed. To be clear on this, we will not accept or consider any proposal for a system at 900 MHz which does not specify the use of equipment that has been "type accepted." This means that the applicant cannot rely on what he might have been told or promised as to the

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availability of "type accepted" equipment in the future: it must be radio equipment that, on the date when the application is submitted, is "type accepted."

145. Finally, some clarification as to our "interconnection" requirement, set out at Section 89.653 of the Rules, is asked. A number of parties point out that at night and over weekends and holidays their main "offices" or "places of business" are closed, yet they have a requirement for dispatching their mobiles to serve their customers. They feel our restriction on "interconnection" would prohibit this method of operation. We have said that "interconnection" must be accomplished "manually" at the licensee's or user's "place of business," and that it may not be accomplished at any "station" or "control point common to more than one user." But this would not preclude the type of arrangements the parties seem to refer to. Thus, if a licensee has an authorized "control station" or "control point" at a location other than his principal office to permit him, through an employee or agent, to dispatch his mobiles during periods when his principal office is closed, he may use this arrangement, just as long as the "control point" or "control station" is used exclusively for his purposes. It may not be shared.

146. Another point raised goes to our requirement that "interconnection" be accomplished "manually." Some licensees would like to use "automatic" type equipment and not literally have to make the "patch" "manually" between their radio facilities and those of the wire line telephone company. What we have in mind, here, is that our transmitter control requirements be observed; and that there be some person under the control or supervision of the licensee present to assure that the station is being operated only for permissible purposes and that our technical and operational requirements are being met. This ultimate objective, of course, can be met whether "interconnection" is carried out "manually" or through the use of what the licensee may feel is more efficient means. We

see no reason why this cannot be allowed. Again, though, the "interconnection" must take place at the location from which the transmitter is controlled; and there must be some person stationed there that can perform the required "control" functions as prescribed by the rules governing the Part 89, 91, and 93 radio services.

X.

Conclusion

147. Accordingly, IT IS ORDERED, That the petitions for reconsideration directed to our *Second Report and Order* in this proceeding ARE GRANTED, to the extent set out in the foregoing opinion; and ARE DENIED in all other respects.

148. IT IS FURTHER ORDERED, That the petition for stay and associated relief, and the supplement to petition for stay and for other associated relief, filed by the National Association of Radiotelephone Systems, ARE DENIED.

149. IT IS FURTHER ORDERED, That the petition to intervene, filed by General Communications Engineering, Inc., IS DENIED.

150. IT IS FURTHER ORDERED, effective May 5, 1975, That Parts 2, 18, 89, 91 and 93 of the Rules ARE AMENDED as shown in Appendix B, attached hereto. Authority for this Action is found in Sections 1, 4(i) and (j) and Section 301, 303, 308, and 309 of the Communications Act of 1934, as amended.

151. IT IS FURTHER ORDERED, That FCC Form 400-S IS ADOPTED.

152. IT IS FURTHER ORDERED, That this proceeding IS TERMINATED.

FEDERAL COMMUNICATIONS COMMISSION

VINCENT J. MULLINS
Secretary

NOTE: See T.S. II(72)-6 and T.S. V(74)-1 for rule amendments.

APPENDIX A

Parties and Pleadings Filed on Reconsideration

Petition for Reconsideration, Airsignal International, Inc.

Petition for Reconsideration, American Telephone and Telegraph Company

Petition for Reconsideration, Association of Maximum Service Telecasters, Inc.

Petition for Reconsideration and Clarification, General Communications Service, Inc.

Petition for Clarification and for Partial Reconsideration, General Electric Company, Major Appliance Business Group

Petition for Clarification and Partial Reconsideration, General Electric Company, Mobile Radio Department

Petition for Partial Reconsideration, GTE Service Corporation

Petition for Reconsideration, Industrial Communications Systems, Inc. and Radio Communications, Inc.

Petition for Reconsideration, Land Mobile Communications Council

Petition for Reconsideration, The Magnavox Company

Petition for Reconsideration, Mototola, Inc.

Parties and Pleadings Filed for Stays

Petition for Stay, Airsignal International, Inc.

Petition for Stay and Suggestion for Suspension of Effective Date, National Association of Radiotelephone Systems

Comments on Petitions for Reconsideration

Opposition and Comments of Airsignal International, Inc., Airsignal International, Inc.

Reply of the American Transit Association to Petitions for Reconsideration, American Transit Association

Opposition, American Telephone and Telegraph Company

Statement in Support of Petition for Reconsideration, Associated Public Safety Communications Officers, Inc.

Petition in Support and Opposition to Petitions for Reconsideration by American Telephone and Telegraph Company; Land Mobile Communications Council; General Electric Company; Mototola, Inc., and GTE Service Corporation, filed by California Mobile Radio Association

Opposition to Petitions for Reconsideration and Stay, Central Committee on Telecommunications of the American Petroleum Institute

Comments in Support of Petition for Reconsideration, Radio Broadcasting Company

Reply to Petitions for Reconsideration, Land Mobile Communications Section of the Communications Division of the Electronic Industries Association

Opposition to Petitions for Reconsideration, Mobilfone, Inc.

Opposition to Petitions for Reconsideration, Motorola, Inc.

Opposition to Petitions for Reconsideration of the National Association of Business and Educational Radio, Inc., National Association of Business and Educational Radio, Inc.

Reply to Petition for Reconsideration, National Association of Broadcasters

Comments in Support of Petitions for Reconsideration, United States Independent Telephone Association

Opposition to Petitions for Reconsideration and Stay, Special Industrial Radio Service Association, Inc.

Reply, American Telephone and Telegraph Company

Reply to Oppositions, GTE Service Corporation

Reply to Opposition to Petition for Reconsideration of the Land Mobile Communications Council, Land Mobile Communications Council

Reply, Motorola Inc.

Comments on Petitions for Stay

Comments, Airsignal International, Inc.

Opposition, American Telephone and Telegraph Company

Opposition to Petition for Stay, International Municipal Signal Associations

Opposition to Petition for Stay, Motorola, Inc.

Opposition to Petition for Stay and Suspension of Effective Date, Motorola, Inc.

Opposition to Petition for Stay, National Association of Business and Educational Radio, Inc.

Motion to Dismiss "Petition for Stay and Suggestion for Suspension of Effective Date", National Association of Business and Educational Radio, Inc.

Opposition of the Utilities Telecommunications Council to Petition for Stay and Suggestion for Suspension of Effective Date and to Petitions for Reconsideration, Utilities Telecommunications Council

Requests for Associated Relief

Petition to Intervene, General Communications Engineering, Inc.

Supplement to Petition for Stay:

Motion to Set Aside Previous Order; and Motion to Reopen the Proceeding and to Hold Evidentiary Hearing Before Full Commission, National Association of Radiotelephone Systems

Opposition, Motorola, Inc.

Opposition, American Telephone and Telegraph Company

Reply to Oppositions, National Asociation of Radiotelephone Systems

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APPENDIX B

Parts 2, 18, 89, 91, and 93 of Chapter I of 47 CFR are amended as follows:

PART 2—FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

1. In § 2.106, columns 5 through 11 of the table are amended for the frequency bands 470-902, 902-928, and 928-960 MHz; the text of footnote US215 is amended and that footnote designator is inserted in column 6 beside the bands 470-902 and 928-960 MHz listed in column 5. The amended text reads as follows:

§ 2.106 Table of Frequency Allocations.

United States		Federal Communications Commission				
Band (MHz) 5	Allocation 6	Band (MHz) 7	Service 8	Class of Station 9	Frequency (MHz) 10	Nature OF SERVICES of stations 11
• • •	• • •	• • •	• • •	• • •	• • •	• • •
470-902	NG. (NG30) (NG43) (NG63) (NG65) (US36) (US88) (US100)	806-821	LAND MOBILE.	Land Mobile.		Conventional and trunked systems.
	(US116)	821-825	LAND MOBILE.			Reserve.
	(US215)	825-845	LAND MOBILE.	Land Mobile.		Cellular systems.
		845-851	LAND MOBILE.			Reserve.
		851-866	LAND MOBILE.	Base.		Conventional and trunked systems.
		866-870	LAND MOBILE.			Reserve.
		870-890	LAND MOBILE.	Base.		Cellular systems.
		890-902	LAND MOBILE.			Reserve.
902-928	G. (US36) (US115)				915	Industrial scientific, and medical equipment.
928-960	NG. (US36) (US116) (US215)	928-947	LAND MOBILE.			Reserve.
		• • •	• • •	• • •	• • •	• • •
• • •	• • •	• • •	• • •	• • •	• • •	• • •

US215 Radiocommunications services operating in the band 890-940 MHz must accept any harmful interference from the operation of any ISM device operating in accordance with FCC standards in effect as of the date of manufacture of the ISM device.

• • • • • • • • • • •

PART 18—INDUSTRIAL, SCIENTIFIC, AND MEDICAL EQUIPMENT

§ 18.13 [Amended]

2. In § 18.13, footnote 2 to the table is deleted.

§ 18.141 [Amended]

3. In § 18.141(a), footnote 2 to the table is deleted.

4. In § 18.144(b)(1), the introductory text is amended to read as follows:

§ 18.144 Procedure for type approval.

• • • • • • • • • • •

(b) • • •

(1) The frequency at all times during the tests below shall be maintained within 70% of the tolerance specified in § 18.141(a), except for equipment operating on 915 MHz, for which it shall be maintained within 100% of the tolerance specified in § 18.141(a).

• • • • • • • • • • •

PART 89—PUBLIC SAFETY RADIO SERVICES

5. In § 89.103(a), the table is amended to add footnote 6 as follows:

§ 89.103 Frequency stability.

(a) • • •

Frequency Range	All Fixed and Base Stations	All Mobile Stations	
		Over three watts	Three watts or less
MHz	Percent	Percent	Percent
• • •	• • •	• • •	• • •
806 to 821	(6) .00015	.00025	.00025
• • •	• • •	• • •	• • •

[6] For control stations, the frequency stability is 0.00025 percent.

6. Section 89.105(e) is amended to read as follows:

§ 89.105 Types of emission.

(e) Except as provided in § 89.655(c), operation in the frequency bands 806-821 and 851-866 MHz is limited to F3 emission.

7. The text of footnote 3 to the table in § 89.111(b) is amended to read:

§ 89.111 Power and antenna height.

(b) • • •

[3] The output power of a transmitter on any authorized frequency in this service shall not exceed 2000 watts (33 dBW).

8. The index to Subpart S or Part 89 is amended to read as follows:

SUBPART S—SPECIAL REGULATIONS GOVERNING LICENSING AND USE OF FREQUENCIES IN THE 806-821 MHz AND 851-866 MHz BANDS

Sec.

General Information

89.601 Purpose.

89.602 Definitions.

89.603 Organization and applicability of rules.

89.604 Eligibility.

89.605 Station identification.

General Restrictions and Limitations on Operation of Conventional and Trunked Systems Authorized in the 806-821 MHz and 851-866 MHz Bands

89.651 Limitations on power and antenna height.

89.652 Restrictions on operational fixed stations.

89.653 Restriction on interconnection.

89.655 Limitations on use and mode of operation of systems licensed in the 806-821 MHz and 851-866 MHz bands.

89.656 Special conditions governing the furnishing of radio equipment by licensees.

89.657 Restrictions on licensing manufacturers and equipment suppliers to furnish service in the 806-821 MHz and 851-866 MHz bands.

89.658 Acceptability of transmitters for licensing in the 806-821 and 851-866 MHz bands.

Application and Processing Procedures

89.701 Forms to be used.

89.702 Supplemental information to be furnished by applicants for facilities under this subpart.

89.703 Supplemental reports required of licensees authorized under this subpart.

89.704 Processing of applications.

Policies Governing the Selection and Assignment of Frequencies for Use in the 806-821 MHz and 851-866 MHz Bands

89.751 Selection and assignment of frequencies.

Channel Loading Requirements for Trunked and Conventional Systems

89.801 Trunked systems.

89.802 Conventional systems.

89.803 Other criteria to be applied in assigning channels for use in conventional systems of communication.

89.804 Other criterion to be applied in licensing channels for use in trunked systems of communication.

89.805 Limitation on the number of frequencies assignable for conventional systems.

89.806 Limitation on the number of frequency pairs assignable for trunked systems and on the number of trunked systems.

89.807 Special licensing requirements for radio systems used to provide service to persons other than the licensee.

89.808 Special limitations on amendment of applications on assignment or transfer of authorizations for radio systems used to provide service to persons other than the licensee.

9. In Section 89.602, the definition of "Duplex radio communication" is deleted and the definition of "Conventional radio system" is amended to read:

§ 89.602 Definitions.

• • • • • • • • • • •

Conventional radio system. A method of operation in which one or more radio frequency channels are assigned to mobile and base stations but are not employed as a trunked group. An "urban-conventional system" is one whose transmitter site is located within 15 miles of the geographic center of any of the first 50 urbanized areas (ranked by population) of the United States. A "suburban-conventional system" is one whose transmitter site is located more than 15 miles from the geographic center of the first 50 urbanized areas. See Table 21, Rank of Urbanized Areas in the United States by Population, Page 1-87, U.S. Census (1970); and Table 1 of paragraph (g) of Section 89.751 of this subpart.

• • • • • • • • • • •

10. In Section 89.604, paragraph (d) is deleted and paragraphs (b) and (c) are amended to read:

§ 89.604 Eligibility.

• • • • • • • • • • •

(b) Any person or entity proposing to provide private dispatch service, subject to the restrictions set forth in this subpart, to any person or entity eligible for licensing under either Part 89, 91, or 93 of this chapter, on a not-for-profit, cost-shared basis.

(c) Any person or entity, except wire line telephone common carriers, proposing to provide, on a commercial basis, base station and ancillary facilities for the use of persons or entities eligible under Part 89, 91, or 93 of this chapter.

11. Section 89.651 is amended to read:

§ 89.651 Limitations on power and antenna height.

(a) The maximum effective radiated power and antenna height, respectively, for base stations used in suburban-conventional systems of communication operating in the 851-866 MHz band shall be no greater than 500 watts (27 dBw) and 500 feet above average terrain (AAT), or the equivalent thereof determined from Table 1 of paragraph (c) of this section. These are maximum values, and applicants will be required to justify power levels and antenna heights requested. For service area requirements less than 20 miles in radius, see Table 2 of paragraph (c) of this section.

(b) The maximum effective radiated power and antenna height, respectively, for base stations used in trunked and urban conventional systems authorized in the 851-866 MHz band shall be no greater than 1 kilowatt (30 dBw) and 1000 feet above average terrain (AAT), or the equivalent thereof determined from Table 1 of paragraph (c) of this section. These are maximum values, and applicants will be required to justify power levels and antenna heights requested. For service area requirements less than 20 miles in radius, see Table 3 of paragraph (c) of this section.

(c) Table 1. Equivalent powers and antenna heights for base stations in the 851-866 MHz band which have a requirement for a 20 mile service area radius.

Antenna Height (AAT) (In Feet)	Power Watts [1] [2]	
	Urban/Trunked	Suburban
Above 5000	65	15
4501-5000	65	15
4001-4500	70	20
3501-4000	75	25
3001-3500	100	30
2501-3000	140	35
2001-2500	200	50
1501-2000	350	80
1001-1500	600	160
501-1000	1000 [3]	220
Up to 500	1000	500 [4]

[1] Power is given in terms of effective radiated power (ERP).

[2] Applicants in the Los Angeles, California, area who demonstrate a need to serve both the downtown and fringe areas will be permitted to utilize an ERP of 1 kilowatt at the following mountain top sites: Santiago Peak, Sierra Peak, Mount Lukens, and Mount Wilson.

[3] Stations with antennas below 1000 feet (AAT) will be restricted to a maximum power of 1 kilowatt (ERP).

[4] Stations with antennas below 500 feet (AAT) will be restricted to a maximum power of 500 watts (ERP)

Table 2. Equivalent powers and antenna heights for suburban-conventional base stations in the 851-866 MHz bands which have a requirement for less than a 20-mile service area radius.

Maximum Effective Radiated Power (Watts)

	Base Station Antenna Height (AAT)					
Service Area Radius (miles)	401–500	301–400	201–300	101–200	51–100	0–50
20	500	500	500	500	500	500
19	400	500	500	500	500	500
18	310	385	500	500	500	500
17	235	300	385	500	500	500
16	175	220	285	440	500	500
15	130	160	215	330	500	500
14	95	120	155	240	480	500
13	70	85	115	175	350	500
12	50	60	80	125	250	500
11	35	45	60	90	180	360
10	25	30	40	60	120	240
9	15	20	25	40	80	160
8	10	12	15	25	50	100
7	6	7	10	15	30	60
6	3	4	5	7	15	30
5 or less	1	2	3	4	8	16

Table 3. Equivalent powers and antenna heights for urban-conventional and trunked system base stations in the 851-866 MHz band which have a requirement for less than a 20-mile service area radius.

Maximum Effective Radiated Power (Watts)

Service Area	Base Station Antenna Height (AAT)							
Radius (miles)	751–1000	501–750	401–500	301–400	201–300	101–200	51–100	0–50
20	1000	1000	1000	1000	1000	1000	1000	1000
19	800	1000	1000	1000	1000	1000	1000	1000
18	640	830	1000	1000	1000	1000	1000	1000
17	480	625	960	1000	1000	1000	1000	1000
16	360	470	720	900	1000	1000	1000	1000
15	270	350	540	675	875	1000	1000	1000
14	200	260	400	500	650	1000	1000	1000
13	140	180	280	350	450	700	1000	1000
12	100	130	200	250	325	500	1000	1000
11	70	90	140	175	230	350	700	1000
10	45	60	90	110	145	220	440	1000
9	30	40	60	75	100	150	300	600
8	20	25	40	50	65	100	200	400
7	15	20	30	40	50	80	160	320
6	8	10	16	20	25	40	80	160
5 or less	5	6	9	12	15	25	50	100

(d) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

12. Section 89.653 is amended to read:

§ 89.653 Restriction on interconnection.

Radio systems licensed under this subpart may be interconnected with the wire line facilities of any telephone company; Provided, however, such interconnection is accomplished at a control point or control station, which is

situated at a fixed location (not in a mobile unit), licensed to the user, where a person immediately responsible for the operation of the base station is on duty, and where all of the requirements of either Section 89.113, 91.107, or 93.107, whichever is applicable, are met. Provided, further, that such interconnection may not be accomplished at any control station or control point facility licensed to, or used by, any person other than the licensee.

§ 89.654 [Deleted]

13. Section 89.654 is deleted.

14. Section 89.655 is amended to read:

§ 89.655 Restrictions and limitations on permissible communications, on use, and on mode of operation.

(a) Systems licensed to provide service to persons or entities eligible under Part 89, 91, or 93 of this chapter may, in conformity with the following restriction, be used:

(1) Only for purposes expressly allowed under Parts 89, 91, and 93 of this chapter.

(2) Only by persons who are eligible for facilities, either under this subpart or in the radio services included under Parts 89, 91, and 93 of this chapter.

(3) Only for the transmission of messages or signals permitted in the service in which the participants are eligible.

(4) Only in the private dispatch mode of operation.

(b) Except as provided at paragraph (c) of this section, radio systems licensed under this subpart may be used for voice communications (telephony), only.

(c) Notwithstanding any contrary provision in this subpart, a system licensed for use by a person or entity

eligible under either Parts 89, 91, or 93 of this chapter may be employed for any purpose or operated in any manner, including the use of F2, F4, and F9 emissions, which is consistent with the regulations governing the service in which the user is eligible; *Provided,* the loading standard which applies to the system is met and the channel or channels are assigned to that person or entity for its exclusive use.

15. Section 89.656 is amended to read:

§ 89.656 Special conditions governing the furnishing of radio equipment by licensees.

Every licensee of a trunked or conventional system furnishing base station facilities on a commercial basis, under this subpart, shall afford users the option of purchasing, leasing, or renting the associated control and mobile station radio gear. Should a user elect to lease or to rent the equipment and should the lease or rental arrangement involve no more than five (5) transmitting/receiving units, the user must be given the further right to cancel the lease or rental agreement at any time, without penalty, on ten days' written notice.

16. Section 89.657 is amended to read:

§ 89.657 Restriction on licensing manufacturers in the 806-821 MHz 851-866 MHz bands.

No person engaged in the manufacture or production of radio frequency ("RF") equipment to be used in systems authorized under this subpart, or any person directly or indirectly controlled (through stock ownership or otherwise) by such manufacturing entity, may be licensed to operate more than one trunked system of communication to be used in providing base station and ancillary facilities to eligibles under either Part 89, 91, or 93 of the Rules.

Application and Processing Procedures

17. Section 89.701 is amended to read:

§ 89.701 Forms to be used.

Applications for conventional and trunked radio facilities shall be submitted on FCC Form 400, and such applications shall be filed with the Commission, at its offices in Washington, D. C. Where the facility is to be established in the Chicago Regional area, FCC Form 425 shall be used and all such applications shall be filed with the Chicago Regional Office. In addition, FCC Form 400-S shall be filed by all applicants.

18. In Section 89.702, paragraphs (a) and (c) are amended to read:

§ 89.702 Supplemental information to be furnished by applicants for facilities under this subpart.

(a) Applicants for conventional or trunked systems of communication shall, in addition to the information required by FCC Form 400 or FCC Form 425, furnish the following data and material:

(1) Where the applicant is a person proposing to provide dispatch service to eligibles under either Part 89, 91, or 93 of this chapter on a not-for-profit, cost-shared basis, he shall furnish:

(i) A copy of the plan or agreement under which service will be offered. It must be in sufficient detail to show that such service will be provided at cost.

(ii) A statement of the purposes for which the system is to be used and of the planned mode of operation.

(iii) The names and addresses of each person to participate in the sharing arrangement.

(iv) A statement showing that each participant is eligible to use the system for the purposes for which it is to be employed.

(2) Where the applicant is a person proposing to provide dispatch service to eligibles under either Part 89, 91, or 93 of this chapter, on a commercial basis, he shall supply:

(i) A statement of the purposes for which the system is to be used and of the planned mode of operation.

(ii) A statement certifying that no person not eligible to use the proposed facility for the purposes for which it is to be authorized will be offered or provided service over or through the licensee's base station facility.

(iii) A copy of the basic agreement under which the dispatch service will be offered.

(3) Where the applicant is a person subject to the provisions of Section 89.657 of this subpart, he shall furnish the following information:

(i) A list of any trunked stations licensed to the applicant.

(ii) A list of any trunked stations licensed to any other person or entity directly or indirectly controlled by the applicant or which directly or indirectly controls the applicant.

(4) All applicants for conventional radio systems shall furnish a list of all conventional radio systems licensed to them or proposed by them within forty (40) miles from the location of the base station transmitter site of the facility applied for.

• • • • • • • • • • •

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(c) All applicants of trunked systems shall specify the number of mobile units to be placed in operation within the term of the license; Provided, however, where the applicant applies for more than the minimum 5 channels, and elects to construct in 5-channel stages, he shall so specify and shall state the number of mobile units to be placed in operation by the end of two years from the date of the grant of his station authorization.

• • • • • • • • • • •

19. In Section 89.703, paragraph (h) is amended to read:

§ 89.703 Supplemental reports required of licensees authorized under this subpart.

• • • • • • • • • • •

(h) All licensees of trunked systems shall report, within seven (7) months of the date of the grant, whether or not construction of the authorized facility has begun, and, within thirteen months of the date of the grant, whether or not construction of the facility has been completed.

20. In Section 89.704, paragraph (a)(5) is amended to read:

§ 89.704 Processing of applications.

(a) • • •

(5) Where, upon examination, it is determined that the proposal cannot be granted or dismissed, but that it must be designated for hearing, such action will be taken.

21. In Section 89.751, paragraphs (e), (f), and (g) are re-designated as (f), (g) and (h), respectively; paragraph (b) is amended and a new paragraph (e) is added to read:

§ 89.751 Selection and assignment of frequencies.

* * * * * * * * * *

(b) Stations authorized by the Commission to operate in the 806-821 and 851-866 MHz band will be afforded protection solely on the basis of the mileage separation criteria set out below. Only co-channel interference between base station operations will be taken into consideration. Adjacent channel and other types of possible interference will not be taken into account.

(1) For trunked systems, the minimum separation between co-channel systems must be 70 miles, except that no trunked system shall be less than 105 miles distant from co-channel wide area trunked systems on any of the following mountain top sites: Santiago Peak, Sierra Peak, Mount Lukens, Mount Wilson (California).

(2) For urban-conventional systems, co-channel base stations will be authorized only when the separation between the centers of the urban areas involved is at least 100 miles.

(3) For suburban-conventional systems, co-channel base stations will be authorized only when the separation between the centers of the suburban loading areas involved is at least 110 miles.

(4) For a suburban conventional system to operate co-channel with an urban conventional system, the distance between the center of the urban area and the center of the suburban loading area must be at least 110 miles.

(5) The minimum distance from any of the following four sites: Santiago Peak, Sierra Peak, Mount Lukens, and Mount Wilson (California) to the center of the nearest co-channel "urban" area, must be 120 miles; and to the center of the near-

est co-channel suburban loading area (for a suburban-conventional station), must be 130 miles.

* * * * * * * * * * *

(e) Notwithstanding the provisions of paragraph (b)(5) of this section, where a channel is assigned for use at either Santiago Peak, Sierra Peak, Mount Lukens, or Mount Wilson (California) and the channel is not fully loaded in accordance with applicable loading criteria, the Commission may issue additional authorizations for wide-area-coverage facilities to be located at the same site area until the channel in question is occupied in conformity with applicable loading criteria. A channel previously assigned at one such site area may not be used at any of the three remaining designated mountain-top sites.

* * * * * * * * * * *

22. In § 89.801, Table 1 of paragraph (b) is amended by deleting the designation "Radiotelephone Group", together with the corresponding loading criteria associated with "Radiotelephone Group", and paragraph (e) is amended to read:

§ 89.801 Trunked systems.

* * * * * * * * * * *

(e) Licensees of trunked facilities must commence construction within six months from the date of grant and complete construction within one year: *Provided, however,* a licensee of a "trunked" facility assigned more than the minimum five-channel group may elect to construct the facility in stages. In this event, the licensee shall complete construction of the basic five-channel group of the authorized facility within the time limits given above; *Provided, further,* should the licensee elect to proceed in this manner, then he must

demonstrate that at the end of a two-year period from the date of the grant of his station authorization, the constructed facility is occupied to a minimum of 70 percent of the loading required, notwithstanding the provisions of paragraph (c) of this section.

23. In § 89.802(b), the table is amended to read:

§ 89.802 Conventional systems.

• • • • • • • • • • •

(b) Table 1, Loading requirements for conventional systems.

Service Group	Channel Loading—Units per Channel Vehicular/Portable		
	Single Licensee/User	2-5 Licensees/Users	Over 5 Licensees/Users
Police and Fire Group	50/100	40/80	30/60
Business Radio Group	90/180	70/140	50/100
Taxicab Radio Group [1]	150	125	100
Motor Carrier Radio Group (urban and inter-urban passenger motor carriers, only)	150/300	125/250	100/200
Other Services Group	70/140	50/100	40/60
Mixed Service Group [2]		70/140	50/100

Note 1. No loading criteria for portable units in the Taxicab Radio Group are given, since the requirement for units of this type has not been established in that service.

Note 2. Full sharing of channels allocated in the 806-821 and 851-866 MHz bands is permissible; and where the eligibles in one service share facilities in common with persons eligible in one of the other radio services, i.e., where channels are jointly used on this basis, then the loading criteria shall be 70/140 or 50/100 mobile and portable units per channel, as shown.

• • • • • • • • • • •

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24. In Section 89.803, paragraph (b) is amended; paragraph (d) is deleted; paragraph (e) is re-designated as paragraph (d); and paragraph (f) is re-designated as (e) and it is also amended. As amended, paragraphs (b) and (e) read:

§ 89.803 Other criteria to be applied in assigning channels for use in conventional system of communication.

* * * * * * * * * *

(b) Where an applicant proposes to furnish service to eligibles under either Part 89, 91, or 93 on a commercial basis, using a conventional system of communication, its application will be considered on the same basis as that of an applicant for private or shared communication facilities.

* * * * * * * * * *

(e) There shall be no limit on the number of systems authorized to operate in any one given area except that imposed by allocation limitations; and no person authorized to operate any radio facility under the provisions of this subpart shall have a right to protest proposals on grounds other than violation of or inconsistency with the provisions of this subpart. All grants are made subject to this condition and to the other conditions and standards set out in this chapter.

* * * * * * * * * *

25. A new section is added to read:

§ 89.805 Limitation on the number of frequencies assignable for conventional systems.

(a) The maximum number of frequency pairs that may be assigned to any one licensee for the operation of a conventional radio system shall be five, except for licensees in the Taxicab Radio service.

(b) Where an applicant proposes to operate a conventional radio system to provide facilities for the use of a single person or entity eligible under Part 89, 91, or 93 of this chapter, he may be assigned only the number the frequency pairs justified on the basis of the requirements of the proposed user of the system.

(c) No more than five frequency pairs may be assigned to any person proposing to operate one or more conventional radio systems to provide facilities for use by more than a single entity, if there is any overlap of the 40 dBu contour of the proposed new facility and any of the 40 dBu contours of any station authorized to that person, or to any person or entity in which he has a direct or indirect interest.

(Note: for the purposes of this subsection, the 40 dBu contour is assumed to be that obtained using maximum effective radiated power and antenna height permitted by this subpart.)

26. A new section is added to read:

§ 89.806 Limitation on the number of frequency pairs assignable for trunked systems and on the number of trunked systems.

(a) The maximum number of frequency pairs that may be assigned for the operation of a trunked radio systems shall be twenty. The minimum number of frequencies that may be assigned for the operation of such a system shall be five.

(b) No more than a single trunked system will be authorized to any one licensee to provide radio facilities for the use of more than a single person or entity where the 40 dBu contour of the proposed facility will overlap the 40 dBu contour of any existing facility of the licensee, or of any concern in which he has a direct

or indirect interest, or for which applications are pending, except where the applicant shows:

(1) That the additional trunked system will be used to provide radio facilities for a single entity, where the additional system is justified on the basis of the requirements of the proposed single user; or,

(2) That radio systems previously authorized to the applicant are being operated to at least 90 percent of their authorized capacity.

(Note: For the purposes of this subsection, the 40 dBu contour is assumed to be that obtained using maximum effective radiated power and antenna height permitted by this chapter.)

27. Section 89.807 is added to read:

§ 89.807 Special licensing requirements for radio systems used to provide service to persons other than the licensee.

Where a conventional or a trunked radio system is to be used to provide radio facilities to a single user or to multiple users, on a commercial basis, any associated control points, control stations, and mobile radio stations shall be authorized only to the user of those particular facilities.

28. Section 89.808 is added to read:

§ 89.808 Special limitations on amendment of applications on assignment or transfer of authorizations for radio systems used to provide service to persons other than the licensee.

(a) No application for a conventional or trunked radio system proposing radio facilities to be made avail-

able for use by a single user or by multiple users on a commercial basis may be amended so as to substitute a new entity except in the following circumstances:

(1) The amendment does not involve a substantial change in the ownership or control of the applicant; or,

(2) The changes in the ownership or control of the applicant are involuntary due to the original applicant's insolvency, bankruptcy, or death.

(b) A license to operate a radio facility for the purposes described in paragraph (a) of this section may not be assigned or transferred prior to the completion of construction of the facility. Provided, however, the Commission may give its consent to the assignment or transfer of control of such a license where the applicant shows:

(1) That the assignment or transfer does not involve a substantial change in ownership or control of the authorized radio facilities; or,

(2) That the assignment or transfer is involuntary due to the licensee's insolvency, bankruptcy, or death.

PART 91—INDUSTRIAL RADIO SERVICES

29. In § 91.102(a), the table is amended to add footnote 7 to the frequency range 806 to 821 MHz to read as follows:

§ 91.102 Frequency stability.

(a) * * *

Frequency Range	Transmitter (input) Power			
	Fixed and Base Stations		Mobile Stations	
	Over 300 watts	300 watts or less	Over 3 watts	3 watts or less
MHz	*Percent*	*Percent*	*Percent*	*Percent*
* * *	* * *		* * *	* * *
806 to 821	(7) .00015	(7) .00015	.00025	.00025
* * *	* * *	* * *	* * *	* * *

* * * * * * * * * *

[7] For control stations, the frequency stability is 0.00025 percent.

* * * * * * * * * *

30. Section 91.103(c) is amended to read:

§ 91.103 Types of emission.

* * * * * * * * * *

(c) Except as provided in § 89.655(c), operation in the frequency bands 806-821 and 851-866 MHz is limited to F3 emission.

31. In § 91.106(b), the table and footnote 3 are amended to read:

§ 91.106 Power and antenna height.

* * * * * * * * * *

(b) * * *

Frequency Range	Maximum plate power input to the final radio frequency stage	Maximum effective radiated power
(MHz)	(watts)	(watts)
* * *	* * *	* * *
806 to 821	(2)	(2)
851 to 866	(3)	(2)
* * *	* * *	* * *

* * * * * * * * * * *

[3] The output power of a transmitter on any authorized frequency in this service shall not exceed 2000 watts (33 dBW).

* * * * * * * * * * *

PART 93—LAND TRANSPORTATION RADIO SERVICES

32. In § 93.102(a), the table is amended by adding footnote 6 to the frequency range 806 to 821 MHz to read as follows:

§ 93.102 Frequency stability.

(a) * * *

Frequency Range	All Fixed and Base Stations	All Mobile Stations	
		Over 3 watts	3 watts or less
MHz	Percent	Percent	Percent
* * *	* * *	* * *	* * *
806 to 821	(6) .00015	.00025	.00025
* * *	* * *	* * *	* * *

* * * * * * * * * * *

[6] For control stations, the frequency stability is 0.00025 percent.

* * * * * * * * * * *

33. Section 93.103(c) is amended to read:

§ 93.103 Types of emission.

* * * * * * * * * * *

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(c) Except as provided in § 89.655(c), operation in the frequency bands 806-821 and 851-866 MHz is limited to F3 emission.

34. In § 93.106(b), the table and footnote 5 are amended to read:

§ 93.106 Power and antenna height.

* * * * * * * * * * *

(b) * * *

Frequency Range (MHz)	Maximum plate power input to the final radio frequency stage (watts)	Maximum effective radiated power (watts)
* * *	* * *	* * *
806 to 821	(4)	(4)
851 to 866	(5)	(4)
* * *	* * *	* * *

* * * * * * * * * * *

[5] The output power of a transmitter on any authorized frequency in this service shall not exceed 2000 watts (33 dBW).

* * * * * * * * * * *

APPENDIX C

Case Precedent on Nature of "Common Carriers" as Legal Entities

The cases cited fall within five broad categories. Summarizing, the first is that an entity (a business or enterprise) is a common carrier depending not on what it purports to be, or on what the parties concerned characterize it as being, but on what it does. In this are included *United States* v. *California*, 297 U.S. 175 (1936); and *United States et al.* v. *Drum et al.*, 368 U.S. 370 (1961). Under the second category (to be a common carrier, one need not serve all the world) are: *Terminal Taxicab Co.* v. *District of Columbia*, 241 U.S. 252 (1916); and *Anderson* v. *Fidelity and Casualty Co.*, 228 N.Y. 475, 127 N.E. 584 (Ct. App., N.Y., 1920). The third deals with the proposition that courts uniformly reject schemes and devices to avoid statutory requirements relating to the control and regulation of "public" carriers. These include: *State ex rel: Board of Railroad Commissioners* v. *Rosenstein et al.*, 217 Iowa 985, 252 N.W. 251 (Sup. Ct., Iowa 1934); *Restivo* v. *West et al.*, 149 Md. 30, 129 Atl. 884 (Ct. App., Md., 1925); *Affiliated Service Corp.* v. *Public Utilities Commission*, 127 Ohio St. 47, 186 N.E. 703 (Sup. Ct., Ohio, 1933); and *Gornish et al.* v. *Pennsylvania Public Utility Commission*, 134 Pa. Super. 565, 4 A. 2d 569 (Super. Ct., Pa., 1939).

Under the fourth category, the carriers cite such cases as: *Celina & Mercer County Telephone Co.* v. *Union Center Mutual Telephone Association*, 120 Ohio St. 487, 133 N.E. 540 (Ohio Sup. Ct., 1921); *State Public Utilities Commission* v. *Noble Mutual Telephone Co.*, 268 Ill. 411, 109 N.E. 298 (Sup. Ct., Ill., 1915); and *Peoples Telephone Exch.* v. *Public Service Commission*, 239 Mo. App. 166, 186 S.W. 2d 531 (Kan. Cty. App., 1945). *North Shore Fish and Freight Co., et al.* v. *North Shore Businessmen's Trucking Association*, 195 Minn., 336, 263 N.W. 98 (Sup.

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Ct. Minn., 1935); *State ex rel. Board of Railroad Commissioners* v. *Rosenstein et al., supra; Affiliated Service Corp.* v. *Public Utilities Commission, supra;* and *Surface Transportation Corporation* v. *Reservoir Bus Lines,* 67 N.Y.S. 2d 135, 271 App. Div. 556 (Sup. Ct. N.Y., App. Div., 1943). These cases, in general, stand for the proposition that, the fact that an "association" or corporation is to be "nonprofit" or that a "cooperative arrangement" is to be available on a "cost shared" basis does not necessarily mean that such entities are not to be regulated as "common carriers." Finally, in the fifth category, are such cases as *Industrial Gas Co.* v. *Public Utilities Commission of Ohio,* 135 Ohio St. 408, 21 N.E. 2d 166 (Sup. Ct., Ohio, 1939); and *United States et al.* v. *Drum et al., supra.* These cases discuss the proposition of the operation of "nonregulated," "utility" or "common-carrier-type" entities in a "regulated field."

Each of these cases has been examined with great care; and while there is no question as to the applicability of these precedents to the subject matter to which they are addressed, they are not pertinent, here, except in a peripheral way, because the issue of law to be decided in this rule making is different in essential ways. As will be pointed out in the text, *infra,* one cannot logically superimpose a scheme of regulation (or cases dealing with those schemes of regulation) that has validity in connection with state or Federal control of common carriers by rail and motor vehicles, or of telephone and telegraph companies, or other "utility-type" enterprises, on a field of Federal regulation where the same principles or philosophy of regulation does not fit or apply and has never been invoked, and where the controlling statute (the Communications Act) mandates otherwise.

Further, each case cited by the carriers involved a specific question of statutory interpretation, and the decision in each rests, in essential part, upon the purpose and

terminology used in the statute being construed. None of these cases involves an interpretation of the provisions of the Communications Act; and none are directed to the question of our authority under the Act to license SMR systems, or SMR-like-systems, to provide physical radio gear to persons eligible in the Public Safety, Industrial, and Land Transportation Radio Services for the express, but limited, purpose of enabling them (eligible persons) to conduct their lawful affairs in an effective and efficient manner.

In addition to the cases mentioned, others were reviewed to determine if any could be uncovered that would more directly assist in reaching the proper decision on the legal point the carriers raise. It was found that the question of "what is" and "what is not" a common carrier, *per se*, has been presented in a variety of ways. To illustrate, in *Ciaccio* v. *New Orleans Public Belt Railroad, et al.*, 285 F. Supp. 373 (D.C. E.D. La., 1968), plaintiff, Ciaccio, was injured while working on railroad cars owned by one of the defendants, Lykes Brothers Steamship Company (Lykes). Suit was brought under the "Safety Appliance Act," and the Court had to decide whether, within the meaning of this statute, Lykes was a "common carrier by railroad." While it was shown that Lykes operated a number of railroad cars in servicing its ships, i.e., caused them to be moved to and from its wharf area and strategic points in the City of New Orleans, the actual locomotion was carried out by the New Orleans Public Belt Railroad System. In these circumstances, Lykes was held not to be a "common carrier by railroad."

Similarly, in *Tilson* v. *Ford Motor Co.*, 130 F.Supp. 676 (D.C. Mich., 1955), suit was brought against the Ford Motor Company for personal injuries sustained by plaintiff's decedent. Liability turned on whether Ford's "Rouge Plant railroad operation" was a common carrier. The evidence showed that the "railroad system" was confined to

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defendant's Rouge Plant area where Ford was engaged principally in the manufacture and assembly of automobiles. In reaching its decision that Ford was not a common carrier, the court pointed out that a common carrier is generally defined as one who holds himself out to the public as engaged in the business of transportation of persons or property from place to place for compensation, offering his services to the public generally. The court said the distinctive characteristic of a common carrier is that he undertakes to carry for all people indifferently, and hence is regarded in some respects as a public servant. It emphasized, the dominant and controlling factor in determining the status of one as a common carrier is his public profession as to the service he offers or performs. Obviously, the Ford Motor Company, in the *Tilson* case, did not publicly profess to be in the transportation business.

In *Arrow Aviation, Inc.* v. *Moore,* 266 F. 2d 488 (8th Cir., 1959), the court dealt with the question of whether appellant, Arrow Aviation, was liable for injuries sustained by a passenger under standards applicable to "private carriers" or the more onerous ones imposed on "common carriers." The court decided that appellant's "air taxi service" was to be treated as a "common carrier," because it held itself out as willing to carry all passengers for hire, indiscriminately. *Semon* v. *Royal Indemnity Company,* 179 F.Supp. 403 (D.C.W.D. La., 1959) presented certain parallels to the *Arrow Aviation* case. There, the legal question was the same, whether defendant's assured was a "private carrier" or a "common carrier." Similar to Arrow Aviation's "air taxi service," the assured, the M/B Sportsman, a passenger motor boat, was available only by charter. It, too, had no fixed schedule of operation; and the boat was available only through negotiations between individuals or groups and its owner. Nonetheless, the court held the M/B Sportsman was not a common carrier, since its owner did not undertake to carry all people indifferently. Compare

Morrisey v. *S.S. A. & J. Faith,* 252 F.Supp. 54 (D.C.M.D. Ohio, E.D., 1965).

Further, in certain modern cases, the problem becomes even more complex, for the decisions must take into account certain features of the growth of the Nation's economy. For example, in *Talsky, et al.* v. *Public Utilities Commission of California,* 14 Cal. Rptr. 325, 363 P. 2d 341 (Sup. Ct., Calif., 1961), the question presented was in terms of whether Talsky was a "highway contract carrier," or a "radial highway common carrier," or a "highway common carrier." But taken separately or collectively, these precedents do not require that SMR systems be regulated as "common carriers" either because they might bear some "similarities" to "common carriers" or for some other argument by analogy.

The broader "utility" field of regulation was also surveyed to see whether case law, there, might be more pertinent; but it was not. On this see: *Board of County Commissioners of Edwards County* v. *Simmons, et al.,* 159 Kan. 41, 151 P. 2d 969 (Sup. Ct. Kans., 1944); and *Southern Pac. Co.* v. *Railroad Commissioners of California, et al.,* 13 Cal. 2d 89, 87 P. 2d 1055 (Sup. Ct., Calif., 1939). These cases hold that the term "public utility" is broad and includes some businesses classified as "common carriers." Thus, common carrier railroads are considered to be public utilities (*Seaboard Air Line Ry.* v. *McRainey, et al.,* 69 Fla. 462 68 So. 753 (Sup. Ct., Fla., 1915)); and, in some jurisdictions, telephone companies and "miscellaneous common carriers" are classed both as utilities and common carriers. *Keith* v. *Bay Springs Telephone Co.,* 251 Miss. 106, 168 So. 2d 728 (Sup. Ct., Miss., 1964); and *State of North Carolina ex rel. Utilities Commission* v. *Carolina Telephone and Telegraph Company,* 267 N.C. 257, 148 S.E. 2d 100 (Sup. Ct., N.C., 1966).

In some of the early decisions a distinction was drawn between "communications common carriers" and "com-

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mon carriers" because the term "common carrier" was originally only intended to include those who undertook generally to transport persons or goods. Thus, in *Western Union Telegraph Co., et al.* v. *Byrd,* 155 Tenn. 455, 294 S.W. 1099 (Sup. Ct., Tenn., 1927), the court held that while Western Union was engaged in interstate commerce and was a public service company or public utility, it was not a "common carrier" as that term was used in the statute being construed.

Other cases have held that mutual telephone companies and other cooperatives are *not* public utilities or common carriers. *State Public Utilities Commission ex rel. Macon County Telephone Co.* v. *Bethany Mutual Telephone Association,* 270 Ill. 183, 110 N.E. 334 (Sup. Ct., Ill., 1915); *State* v. *Southern Elkhorn Telephone Co.,* 106 Neb. 342, 183 N.W. 562 (Sup. Ct., Neb. 1921); *Interstate Commerce Commission* v. *Shippers Cooperative, Inc.,* 196 F.Supp. 8 (D.C.S.D., Calif., 1961); and *Philadelphia Ass'n of Wholesale Opticians* v. *Pennsylvania Public Utilities Commission,* 152 Pa. Super. 89, 30 A. 2d 712 (Super. Ct., Pa., 1943).

Each case depends on the facts peculiar to it; the statute being construed; and a variety of other matters. See: *Allaman, et al.,* v. *Pennsylvania Public Utility Commission,* 149 Pa. 353, 27 A. 2d 516 (Super. Ct., Pa., 1942), where the operator of a coal yard delivering coal to its customers, contrary to the opinion of Pennsylvania Public Utilities Commission, was held, on appeal, not to be a "public utility" or "common carrier" or "contract carrier" within meaning of applicable statute; *Ex parte Martinez,* 22 Cal. 2d 259, 138 P. 2d 10 (Sup. Ct., Calif., 1943), where taxicab companies were found to be neither "common carriers" nor "public utilities" under the provisions of California Public Utilities Act, but were subject to regulation by municipalities under the general police powers; *Junction Water Co.* v. *Riddle,* 108 N.J. Eq. 523, 155 Atl. 887

(Chancery, N.J., 1931), in which defendant water company was held not to be a public utility (water, gas, and electric companies are generally considered public utilities); *City of Phoenix, et al.*, v. *Kason et al.*, 54 Ariz. 470, 97 P. 2d 210 (Sup. Ct., Ariz. 1939), holding city owned water company not subject to regulation as a public utility; *Southern Ohio Power Co.* v. *Public Utilities Commission of Ohio*, 110 Ohio St. 246, 143 N.E. 700 (Sup. Ct., Ohio, 1924), an electric power company producing and selling power to other power companies for resale to individual consumers was held not to be a public utility; but a municipal airport, constructed with public funds for public use, was declared a public utility. *Trans World Airlines, Inc.* v. *City of San Francisco, et al.*, 119 F.Supp. 516 (D.C. N.D., Calif., S.D., 1954).

Even in the broad "utility" field the decision in each case depends in essential ways, first, on the statute being interpreted; and, second, on the public purpose behind the statute as it relates to the factual matters under consideration. It is believed there is no logical way to extend the legal principles developed in other cases, by way of analogy or otherwise, to the situation at hand. And, as previously indicated, no case has been found, either among those cited by the carrier interests or those independently researched, that compels the conclusion that this Commission does not, as a matter of law, have discretion, under the Communications Act, in the rule making at hand to select the regulatory approach in licensing SMR systems that can be demonstrated best serves the public interest.

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APPENDIX D

Cases Cited on SMR System Licensing Plan

American Broadcasting Co. v. *Federal Communications Commission,* 89 U.S. App. D.C. 298, 191 F.2d 492 (1951).

Ashbacker Radio Corporation v. *Federal Communications Commission,* 326 U.S. 327 (1945).

Coastal Bend Television Co. v. *Federal Communications Commission,* 91 U.S. App. D.C. 251, 234 F.2d 686 (1956).

Federal Communications Commission v. *Pottsville Broadcasting Co.,* 309 U.S. 134 (1940).

Federal Communications Commission v. *RCA Communications, Inc.,* 346 U.S. 86 (1952).

Federal Communications Commission v. *Sanders Brothers Radio Station,* 309 U.S. 470 (1939).

Federal Power Commission v. *Texaco, Inc.,* 417 U.S. 380 (1974).

Florida Lime and Avocado Growers, Inc., et al. v. *Paul,* 373 U.S. 132 (1963).

Friedman v. *Federal Communications Commission,* 105 U.S. App. D.C. 47, 263 F.2d 493 (1959).

GTE Service Corporation v. *Federal Communications Commission,* 474 F.2d 724 (2d Cir. 1973).

Hawaiian Telephone Company v. *Federal Communications Commission,* —— U.S. App. D.C. ——, 498 F.2d 771 (1974).

Head v. *New Mexico Board of Examiners in Optometry,* 374 U.S. 424 (1963).

Lafayette Radio Electronics Corporation v. *United States,* 345 F.2d 278 (Second Cir., 1965).

Logansport Broadcasting Corp. v. *United States,* 93 U.S. App. D.C. 342, 210 F.2d 24 (1954).

National Broadcasting Co., Inc., et al. v. *United States et al.,* 319 U.S. 190 (1942).

Northern States Power Company v. *State of Minnesota,* 447 F.2d 1143 (8th Cir., 1971)

Peoples Broadcasting Co. v. *United States,* 93 U.S. App. D.C. 78, 209 F.2d 286 (1953).

Philadelphia Television Broadcasting Co. v. *Federal Communications Commission,* 123 U.S. App. D.C. 298, 359 F.2d 282 (1966).

Souris River Telephone Mutual Aid Corp., 28 FCC 275 (1960).

SEC v. *Chenery Corp.,* 332 U.S. 194 (1947).

United States et al. v. *Southwestern Cable Co. et al.,* 392 U.S. 157 (1968).

United States v. *Storer Broadcasting Co.,* 351 U.S. 192 (1955).

Udall v. *Tallman,* 380 U.S. 1 (1965).

WIRL Television Co. v. *United States,* 102 U.S. App. D.C. 341, 253 F.2d 863 (1958).

Zenith Radio Corp. v. *Federal Communications Commission,* 93 U.S. App. D.C. 284, 211 F.2d 629 (1954).

APPENDIX E

FCC Form 400-S
Date

UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION
Washington, D. C. 20554

SUPPLEMENTAL INFORMATION—806-821 MHz AND 851-866 MHz BANDS TRUNKED AND CONVENTIONAL SYSTEMS

File No.

The following supplemental information is required when making application for Trunked or Conventional Systems of Communication to operate in the 806-821 MHz and 851-866 MHz frequency bands in accordance with the provisions of Subpart S of Part 89 of the Commission's Rules. For details as to the data to be furnished, refer to the instructions for each item.

1. *Name of Applicant*:

2. Application is being made for (check one):

[a] *a conventional system* [ ]

Furnish, as Exhibit No. 1, a statement as to the number of vehicular and portable units (identified, as such, separately) to be placed in operation at the time of grant, and the number to be in operation within eight (8) months from the date of grant.

[b] *a trunked system* [ ]

Furnish, as Exhibit No. 1, the number of mobile units (vehicular or portable) to be placed in operation within the term of the license period and within two (2) years, where appropriate. See instructions.

3. The facilities requested will be employed to provide service (check one):

[a] *solely to the applicant* [ ]

[b] *to eligibles under Parts 89, 91, or 93 on a cost-shared, not-for-profit basis.* [ ]

Furnish, as Exhibit No. 2, a copy of the agreement under which service will be offered. Include, also, a statement of the purpose for which the proposed system will be used: give the name and address of each person to participate in the arrangement; and show that each participant named is eligible to use the system (for the purpose for which it is to be employed).

[c] *to eligibles under Parts 89, 91, or 93 on a commercial basis* [ ]

Furnish, as Exhibit No. 2, a copy of the contract under which base station facilities are to be offered. Include, also, a statement of the purposes for which the system will be used and, in addition, a certification that no person not fully qualified or eligible to employ the radio facilities, under the controlling rules and regulations of the Commission, will be provided service.

[d] *If the application is for a mobile, control station, or a control point to be associated with a base station facility referenced at Item c, give the name of the licensee of the base station facility and call sign(s) of the station(s).*

Name of licensee:

Call sign(s) of station(s):

4. Is the applicant engaged in the manufacture of radio frequency (RF) equipment employed in land mobile systems of radio communications? NO [ ] YES [ ]

If "Yes", is the applicant, or any person or entity directly or indirectly controlled by the applicant or who directly or indirectly controls the applicant, authorized to operate any other trunked facility?

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5. (a) Is the applicant, or any other person or entity directly or indirectly controlled by the applicant, or who directly or indirectly controls the applicant, authorized to operate any conventional radio system? NO [ ] YES [ ]

If "Yes," furnish as Exhibit No. 3 a list of all such conventional stations whose base station transmitter sites are within forty (40) miles of the location of the base station transmitter site of the proposed facility.

(b) Is the applicant, or any other person or entity directly or indirectly controlled by the applicant, or who directly or indirectly controls the applicant, authorized to operate any trunked radio system? NO [ ] YES [ ]

If "Yes," furnish as Exhibit No. 4 a list of all such trunked stations whose base station transmitter site is within forty (40) miles of the location of the base station transmitter site of the proposed facility.

6. The radio system will be operated (check one):

[a] *As a mobile relay facility.* [ ]

[b] *In two-frequency simplex mode.* [ ]

[c] *In full duplex mode.* [ ]

[d] *Other.* (Furnish as Exhibit No. 5 a statement describing the manner in which the facility, if authorized, will be operated.) [ ]

7. The height of the antenna (above average terrain) of the base station is: ..... feet

8. The effective radiated power of the base station is: ..... watts

9. Furnish, as Exhibit No. 6, the following information:

(a) A functional diagram of the planned radio system. Include, with this, a block diagram showing the location of the antenna site in relation to the control station or control point and the area in which applicant's mobile units will operate. Give distances in miles between the control point or control station and the base station facility and indicate, in miles, the point most distant from the site of the antenna and that at which applicant's mobile units are to operate.

(b) The method(s) of signalling to be employed in the system of communication proposed.

Applicants furnishing this information need not submit the functional system data requested on FCC Form 400.

10. Furnish, as Exhibit No. 7, when applicable:

(a) Where control station(s) are to be used in the proposed system of communication, a statement certifying that the output power of the proposed transmitter(s) will be adjusted to comply with the requirements of Section 89.657 of Subpart S of Part 89 of the Commission's Rules.

(b) A certification, pursuant to the provisions of Section 89.801(c) of Subpart S of Part 89 of the Commission's Rules, that a minimum of 70 percent of the mobiles specified in the application will be placed in operation not later than the date on which the term of the license for the facility is to expire. Where the applicant elects to construct in five-channel stages, he shall certify that 70 percent of the required loading for five channels will be placed in operation within two (2) years from the date of grant.

(c) A certification, pursuant to the provisions of Section 89.802(c) of Subpart S of Part 89 of the Commission's Rules, that a minimum of 70 percent of the mobiles specified in the application will be placed in operation not later than eight (8) months from the date of the grant of the license for the requested system.

The applicant acknowledges that, where the authorized facilities are not loaded in accordance with the foregoing representation(s), any channels not so employed may be assigned, at the discretion of the Commission, to another applicant in accordance with the policies set out under Subpart S of Part 89 of the Commission's Rules.

SIGNATURE: .....
(DESIGNATE APPROPRIATE CLASSIFICATION BELOW)

DATE: .....

WILLFUL FALSE STATEMENTS MADE ON THIS APPLICATION ARE PUNISHABLE BY FINE AND IMPRISONMENT.
(U. S. CODE, TITLE 18, SECTION 1001)

[ ] INDIVIDUAL APPLICANT

[ ] OFFICER OF APPLICANT CORPORATION

[ ] OFFICIAL OF GOVERNMENTAL AGENCY

[ ] MEMBER OF APPLICANT PARTNERSHIP

[ ] OFFICER WHO IS ALSO A MEMBER OF APPLICANT ASSOCIATION

INSTRUCTIONS TO FORM 400-S

FCC Form 400-S is to be used in applying for conventional and trunked systems of communications, as defined at Section 89.602 of Subpart S of Part 89 of the Commission's Rules. Section 89.701 of the Rules.

Applications for stations to be located in the Chicago, Illinois, Region, as defined at Section 89.60 of Subpart A of Part 89 of the Rules, shall be submitted on FCC Form 425 and applicants need not respond to the inquiries set forth at Items 6, 7, and 8. Applications for stations to be located in all other regions shall be submitted on FCC Form 400 and applicants must answer all of the inquiries set out in this supplement.

ITEM 1—The name of the applicant, as given in FCC Form 400 or FCC Form 425, should be included here.

ITEM 2—The applicant is to specify whether the proposal is for a conventional or trunked system of communication. Where the application is for one to five channels, it may be classified as a "conventional system" regardless of whether or not the applicant plans to use the facility in "multiple access" or "cellular" mode or in a variation of either of these system configurations.

The applicant must also furnish (as Exhibit No. 1) a statement of the number of vehicular and portable units to be placed in operation at both the time of grant and within eight (8) months from the date of grant, in the case of a conventional system (see Section 89.802(c) of the Rules), and for trunked operations (Section 89.801(c)), the applicant must give the number of units to be placed in operation at the time of grant (if that is known or can be estimated) together with the number of mobiles to be placed in operation during the term of the license period, five years. For trunked systems, where the applicant proposes to construct in five channel-stages (Section 89.801 (e)), he shall also give the number of mobile units to be

placed in operation within two (2) years from the date of grant.

In the case of trunked operations, no distinction is made between vehicular and portables. All mobile units, vehicular and portables, may be included in the count for loading purposes.

ITEM 3—At Item 3(a), state whether the station(s) are to be used exclusively to provide service to the applicant.

At Item 3(b), the applicant should indicate that the facilities applied for are to be shared on a not-for-profit basis. This eligibility classification is applicable to all co-operatives. In all such cases, a copy of the agreement must be complete and in such detail that it will be clear how the arrangement will be implemented. Also, its terms must show that no participant will pay more than his proportionate share for the use of the radio station.

Also, the applicant must give the purposes for which the system is to be used and the names and addresses of all those to participate in the sharing arrangement. This information is to be current, to the degree reasonably possible, as of the date of execution of the application form. Any person not so identified at the time the application is filed may not use the facility until permission to do so is given, in accordance with the provisions of Section 89.703 (a) of Subpart S of Part 89 of the Rules.

Further, each person to participate in arrangements of this type must be shown to be eligible and qualified to use the facilities for permissible purposes. Where the station is to be used to serve a "mix" of eligible users, that fact should be made known, and in all such cases it should be understood that the system will be subject to loading criteria for the "Mixed Service Group" set out under Section 89.801 or 89.802 of Subpart S of Part 89 of the Rules.

Item 3(c) applies to applications for facilities to provide base station facilities to eligibles under Parts 89, 91, or 93 on a commercial basis. In this connection, the applicant must submit a copy of the contract under which such facilities are to be offered. Further, the applicant must state, with particularity, the purpose for which the proposed system will be employed and he must certify that no person not fully qualified and eligible to share in the use of the facilities will be provided service. The required certification may be in the form of a statement representing that this will be the case and signed by the person executing the application on behalf of the applicant.

Item 3(d) applies where the applicant plans to use base station facilities furnished by another licensee on a commercial basis.

Item 4—Manufacturers of radio frequency ("RF") equipment employed in land mobile systems are limited to one trunked system nation-wide. See Section 89.657 of the Rules.

Item 5—Furnish the information asked at items (a) and (b) of item 5. See Section 89.702(a)(4) and 89.806(b).

Item 6—In response to Item 6, the applicant is to specify the method of operation he plans to use. It is important that this be correctly specified, because, in certain instances, the applicant may be required to share the assigned frequency or frequencies with other eligibles, and, in such cases, it will be necessary for the Commission to have this information to permit it to load assigned frequencies with users proposing compatible modes of operation.

Where the mode of operation falls under the 6(d) classification, the applicant must furnish details as to the planned mode of operation. Section 89.803 of the Rules.

Item 7—The applicant must give the antenna height above average terrain of the proposed base station. In arriving at this figure, the applicant should use the method described

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at Section 89.123(b), Table A, "Antenna height in feet (AAT)," note 1, as set out under Subpart A of Part 89 of the Rules. This requirement does not apply to facilities which are to be located on Santiago Peak, Sierra Peak, Mount Lukens, or Mount Wilson in the State of California. See Section 89.651(c) of the Rules. Where AAT is given, applicants need not answer antenna height questions in FCC Form 400.

ITEM 8—In response to this item, the applicant must specify the effective radiated power (ERP) in watts of the proposed base station. Section 89.651 of the Rules.

ITEM 9—The applicant is required to furnish data to show that the facilities requested are required to provide service to mobile units in the applicant's proposed area of operation. Please refer to Section 89.651 of the Rules.

Further, the applicant must specify the method of signalling that will be employed. This information is to be furnished regardless of whether the proposal is for a trunked or conventional facility or for a single pair or multiple pairs of frequencies available for assignment in this band.

ITEM 10—The requirements of Item 10 are designed to provide the Commission with additional information required under Subpart S of Part 89, as set out in the referenced rules. See Sections 89.657; 89.801(c); and 89.802(c).

APPENDIX F

Guidelines Under Which Developmental Authorizations For Cellular Systems in the 806-947 MHz Frequency Bands Will Be Issued

I. Eligibility

Developmental authorizations for cellular systems in the 806-947 MHz frequency band will be issued only to existing and proposed communication common carriers who are legally, financially and otherwise qualified to conduct experimentation for the development of engineering, operational data and techniques directly related to the establishment of a high capacity mobile telephone system which is based upon a cellular concept and regulated under Part 21 of the Commission's Rules.

II. Scope of Service

Developmental authorizations will be issued for development of a high capacity mobile telephone system using cellular system technology, including provisions for mobile telephone and automotic dispatch service to be governed by Part 21 of the Rules and Regulations. (See Note)

III. Program of Research and Development

A program of research and development must be submitted for constructing and operating the cellular system. This showing should include a description of the technical and operational standards to be developed, a time schedule for constructing and developing the system and the estimated time for developing the system into a fully operational prototype. The program of research and development, as stated by an applicant in the application for construction permit or license or stated in the instrument of station authori-

zation, shall be substantially adhered to unless the licensee is otherwise authorized by the Commission.

IV. Terms of Grant: General Limitations

a. Developmental authorizations shall normally be issued for a period of five years or shorter as the Commission may deem appropriate in any particular case, and shall be subject to cancellation without a hearing by the Commission at any time upon notice to the licensee.

b. Where some phases of the developmental program are not covered by the General Rules of the Commission or by Part 21 of the Rules, the Commission may specify supplemental or additional requirements or conditions in each case as it may deem necessary in the public interest, convenience or necessity.

c. Frequencies allocated to the service toward which such development is directed will be assigned for developmental operation on a one system per market area basis.

d. Only one developmental system will be authorized any single applicant.

e. No interference shall be caused to the regular services of stations operating in accordance with the Commission's Table of Frequency Allocations (2.106 of the Rules and Regulations).

f. All systems shall be designed for nationwide compatibility for roamer operation.

g. The rendition of communication service for hire is not permitted unless specifically authorized by the Commission.

h. Construction of developmental system must begin within one year of the date of grant.

i. The grant of a developmental authorization carries with it no assurance that the developmental program, if successful, will be authorized on a permanent basis.

V. Supplementary Showing Required

a. Authorizations for development of a cellular system will be issued only upon a showing that the applicant has a definite program of research and development, the details of which shall be set forth, having reasonable promise of substantial contribution to these services within the term of such authorization. In addition to showing that the applicant is financially qualified or that adequate provision has been made to underwrite the costs of the proposed venture, a specific showing should be made as to the factors which the applicant believes qualify him technically to conduct the research and development program, including a description of the nature and extent of engineering facilities which applicant has available for such purpose.

b. Expiring developmental authorizations may be renewed only upon the applicant's compliance with the objectives of the authorization sought to be renewed and upon a factual showing that further progress in the program of research and development requires further radio transmission and that the public interest, convenience or necessity would be served by renewal of such authorization.

VI. Developmental Report Required

a. Upon completion of the program of research and development, or, in any event, upon the expiration of the instrument of station authorization under which such investigations were permitted, or at such times during the term of the station authorization as the Commission may deem necessary to evaluate the prog-

ress of the developmental program, the licensee shall submit, in duplicate, a comprehensive report on the following items, in the order designated:

1. Report on the various phases of the project which were investigated.
2. Total number of hours of operation on the frequencies assigned.
3. Copies of any publication on the project.
4. A listing of any patents applied for, including copies of any patents issued as a consequence of the activities carried forth under the authorization.
5. Detailed analysis of the result obtained.
6. Any other pertinent information.

b. In addition to the information required by paragraph (a) of this section, the developmental report of a station authorized for the development of a proposed radio service shall include comprehensive information on the following items:

1. Probable public support and methods of its determination.
2. Practicability of service operations.
3. Interference encountered.
4. Pertinent information relative to merits of the proposed service.
5. Propagation characteristics of frequencies used, particularly with respect to the service objective.
6. Frequencies, if any, believed to be more suitable and reasons therefore.
7. Type of signals or communications employed in the experimental work.

c. Normally, developmental reports will be made a part of the Commission's public records. However, an applicant may request that the Commission withhold from the public certain reports and associated material relative to the accomplishments achieved under developmental authorization, and, if it appears that such information should be withheld, the Commission will so direct.

NOTE: Cellular systems are generally described as mobile radio systems which are able to attain large capacities through the coordinated reuse of a group of radio channels. In such systems, each radio channel can be used many times in separate areas or "cells" within a single city and its environs. Mobile units communicate with any of an array of cell control locations distributed about the system, which in turn are connected by wireline facilities to switching and control centers, and thus interconnected to the telephone network. Cellular systems must have the ability to locate a vehicle, establish a connection through an appropriate cell control location, and transfer that connection to other cell control locations as the mobile unit moves. The number of cell control locations in a system depends on the degree of channel reuse required.

APPENDIX D

Before the

FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

FCC 75-837 36156

DOCKET No. 18262

In the Matter of

An Inquiry Relative to the Future Use of the Frequency Band 806-960 MHz; and

Amendment of Parts 2, 18, 21, 73, 74, 89, 91, and 93 of the Rules Relative to Operations in the Land Mobile Services Between 806 and 960 MHz.

Memorandum Opinion and Order
(Proceeding Terminated)

Adopted: July 16, 1975 Released: July 18, 1975

By the Commission: Commissioners Wiley, Chairman; Reid and Washburn concurring in the result.

1. We have before us for consideration pleadings filed by a number of parties to this proceeding [1] seeking recon-

[1] Petition for Reconsideration and Suggestion for Suspension of Effective Date, filed April 30, 1975, by the National Association of Radiotelephone Systems (NARS); Petition for Partial Reconsideration, filed April 30, 1975, by GTE Service Corporation (GTESC), and Comments by Airsignal International, Inc. (Airsignal), filed April 30, 1975. Response to Petition for Reconsideration, filed May 23, 1975, by the General Electric Company (General Electric). And additionally, Petition for Clarification Or, Alternatively, for a Declaratory Ruling and Supplement to Petition for Clarification, filed by General Electric on May 23, 1975, and June 23, 1975, respectively. And, lastly, Petition to Refrain from Granting Licenses Pursuant to Applications filed for Authorization in

sideration of certain orders adopted by us in this rule making. *Land Mobile Radio Service, Second Report and Order,* Docket No. 18262, 46 FCC 2d 752 (1974), 39 F.R. 16831 (May 10, 1974), *on reconsideration, Land Mobile Radio Service, Memorandum Opinion and Order,* Docket No. 18262, 51 FCC 2d 938 (1975), 40 F.R. 14451 (March 31, 1975). The issues raised by these parties are all related; and we will review and dispose of them together in this opinion.

2. First, Airsignal, GTESC and NARS ask that we reconsider a number of findings and conclusions as to our regulatory plan for cellular, trunked and conventional systems of communication. They want these matters decided in a different way; and advance reasons and arguments in support of the positions they take. However, upon review, we find that the issues they raise and the arguments they advance in support of their positions are substantially the same, if not identical, to those previously raised and were disposed of in our previous opinions and orders in this proceedings. Nevertheless, since some changes were made in our original decision, we have considered these arguments, but we are not persuaded to modify our orders on the questioned points; and accordingly, we affirm the *Second Report and Order* as modified on prior reconsideration by the referenced *Memorandum Opinion and Order* of March, 1975.

3. In addition, General Electric and NARS ask that we clarify our orders with respect to possible licensing of "community repeaters" at 900 MHz.[2] Both General Elec-

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the 900 MHz Band Involving Entrepreneurial Community Repeater Operations, submitted June 19, 1975, by NARS, and the responsive pleadings directed the NARS petition and to General Electric's Supplemental Request of June 23, 1975.

[2] "Community repeater" operation is described in some detail in our notice in Docket No. 18921. We rely on that description and will not redefine the arrangement here. See *Multiple Licensing—*

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tric and NARS feel that authorization of such "mobile relay" systems under existing "multiple licensing" practices would be contrary to our announced regulatory scheme for "conventional" and "trunked" facilities in this band, with NARS also contending that "multiple licensing" would be in conflict with the Court's stay order in this case.[3]

4. As to these matters, we want no confusion as to the licensing policies to be followed at 900 MHz; and we would not, of course, take any action which we believed would be inconsistent with the referenced mandate of the Court of Appeals. Thus, we will grant the relief General Electric and NARS ask to the extent of clarifying our orders in the areas to which these parties direct our attention.

5. Parenthetically, as to "multiple licensing," we would point out that the term simply denotes the administrative practice followed by us for many years in authorizing certain types of sharing arrangements in the Public Safety, Industrial, and Land Transportation Radio Services. Under these arrangements, an "eligible user" is issued an individual license to "time share" a particular radio transmitter with other "eligible users" (who are also individually licensed) in situations in which it is feasible for him to do so.

6. In such cases, each "user" (eligible) is the "licensee." He, thus, is the person upon whom we confer the

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Safety and Special Radio Services, Docket No. 18921, *infra,* at para. 8.

[3] See ***Order,*** June 10, 1975, United States Court of Appeals for the District of Columbia Circuit, *National Association of Regulatory Utility Commissioners, et al.* v. *Federal Communications Commission, et al,* Case Nos. 74-1585, 74-1659, and 74-1696. In pertinent part, the *Order* recites: ". . . that the FCC order under review is stayed pending appeal to the extent that it authorizes the assignment or operation of radio spectrum space to *Specialized Mobil Radio Systems:*" (Emphasis supplied.)

"right to operate" on the "assigned frequency or frequencies." He is the one who is held responsible to us for employing the system only for authorized purposes. He may use it only to transmit "permissible communications;" and he may operate the "RF" device licensed to him only in ways that are consistent with the "service" in which his station is licensed.

7. The equipment company involved in the arrangement [3] has no parallel rights or privileges. It cannot operate the system. It is not entitled (as the "licensee" is) to "use" the "assigned" portion of the "radio spectrum" for any purpose, i.e., the rights of the "licensee" do not extend to the third-party equipment company. And, significantly, we think, should the "licensee" abandon the "use" of the supplier's radio gear, the "assigned spectrum" follows the "licensee" and the equipment company has no residual rights insofar as its "use" is concerned. Thus, statutory rights pertaining to renewal of licenses do not apply to it. Those dealing with modification of licenses are not ones that it can resort to. Nor do the provisions of Section 312 of the Act (revocation) afford such a business entrepreneur procedural recourse of any kind. In summary, then, in the "private" land mobile radio services, particularly in the environment in which those services have been constituted, the role of the equipment supplier is just that, i.e., a person who supplies equipment.

8. While we have recognized some problems with our "multiple licensing" practices, those are being reviewed in

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[3] In every case, whether it involves an arrangement in the "private" services or a common carrier operation, there must be some third party to manufacture and supply and, at times, to maintain the physical radio gear used in systems of radiotelecommunication, i.e., in systems in which messages are transmitted through space by means of radiated energy of electromagnetic waves. And this is so regardless of whether the generator (transmitter) of electromagnetic waves is shared or not.

our rule-making proceeding in Docket No. 18921. *Multiple Licensing—Safety and Special Radio Services*, Docket No. 18921, 24 FCC 2d 510 (1970), 35 F. R. 12007 (July 25, 1970). There we are studying the matter in the full light of the comments filed by the parties to that proceeding with a view toward possible strengthening our regulatory procedures applicable to that practice. However, we made it clear in that Docket that we intended to continue the practice as one which is "not unlawful" and which is "often necessary and desirable" in the public interest. *Multiple Licensing—Safety and Special Radio Services, supra*, at p. 518. In these circumstances, we do not believe we should foreclose the benefits of "multiple licensing" at 900 MHz, particularly in light of our determinations in that proceeding.

9. In short, while there are some "similarities" between the sharing arrangements authorized under our licensing practices for "community repeaters" and those that are to apply to Specialized Mobile Radio Systems, to be "licensed" under 89.604(c) of the new Subpart S,[4] we do not view them as substantive likenesses which require the conclusion NARS suggests. It should be emphasized that under Section 89.604(c) an entrepreneur, who need not be otherwise eligible for licensing as a user, would be assigned ("licensed to use") a portion of the radio spectrum to provide radio service to eligible users. This is not the case with the "community repeater" arrangements we refer to.

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[4] Section 89.604(c) pertains to "eligibility" for "licensing" and reads: "Any person or entity . . . proposing to provide, on a commercial basis, base station and ancillary facilities for the use of persons or entities eligible under Part 89, 91, or 93 of this chapter." It creates a "new" eligibility classification; permits "operation" of a "new" class of radio station; and extends our "licensing" processes to a "new" type of arrangement created under and structured through our "new" 900-MHz allocation and assignment and licensing processes and procedures and practices.

10. Thus, we looked upon SMRS licensing as "an important additional option for eligibles in" the Public Safety, Industrial, and Land Transportation Radio Services (*Land Mobile Service, Memorandum Opinion and Order,* Docket No. 18262, *supra,* at p. 956), and "multiple licensing" was not specifically excluded. However, we acknowledge that the practice may have limited application at 900 MHz. There we plan to assign frequencies on a "first in" "first out" basis and there will also be "vertical" loading. These features will for practical reasons restrict "multiple licensing" of "community repeaters." But, to be clear, "multiple licensing" is not barred under our new Subpart S regulations; nor do we feel the Court intended its mandate to extend to this established administrative practice. We do not so construe the Court's order.

11. In view of the foregoing, It Is Ordered, That the referenced petitions for reconsideration filed by the National Association of Radiotelephone Systems, GTE Servive Corporation, and Airsignal International, Inc., on April 30, 1975, Are Denied.

12. It Is Further Ordered, That the "Suggestion for Suspension of Effective Date," filed April 30, 1975, by the National Association of Radiotelephone Systems, Is Denied.

13. It Is Further Ordered, That the Petition for Clarification Or, Alternatively, for A Declaratory Ruling, filed May 23, 1975, by the General Electric Company, and the Petition to Refrain from Granting Licenses Pursuant to Applications filed for Authorization in the 900 MHz Band Involving Entrepreneurial Community Repeater Operations, filed June 19, 1975, by the National Association of Radiotelephone Systems, to the extent indicated in the opinion above, Are Granted.

14. It Is Further Ordered, That the Supplement to Petition for Clarification, filed June 23, 1975, by the General Electric Company, Is Dismissed As Moot.

15. It Is Further Ordered, That this Proceeding Is Terminated.

FEDERAL COMMUNICATIONS COMMISSION

Vincent J. Mullins
Secretary

APPENDIX E

Communications Act of 1934

47 U.S.C. § 151 *et seq.* (1970)

TITLE I. GENERAL PROVISIONS

§ 152. Application of chapter

(a) The provisions of this chapter shall apply to all interstate and foreign communication by wire or radio and all interstate and foreign transmission of energy by radio, which originates and/or is received within the United States, and to all persons engaged within the United States in such communication or such transmission of energy by radio, and to the licensing and regulating of all radio stations as hereinafter provided; but it shall not apply to persons engaged in wire or radio communication or transmission in the Canal Zone, or to wire or radio communication or transmission wholly within the Canal Zone.

(b) Subject to the provisions of section 301 of this title, nothing in this chapter shall be construed to apply or to give the Commission jurisdiction with respect to (1) charges, classifications, practices, services, facilities, or regulations for or in connection with intrastate communication service by wire or radio of any carrier, or (2) any carrier engaged in interstate or foreign communication solely through physical connection with the facilities of another carrier not directly or indirectly controlling or controlled by, or under direct or indirect common control with such carrier, or (3) any carrier engaged in interstate or foreign communication solely through connection by radio, or by wire and radio, with facilities, located in an adjoining State or in Canada or Mexico (where they adjoin the State in which the carrier is doing business), of another carrier not directly or indirectly controlling or controlled by, or under direct or indirect common control with such carrier, or (4) any carrier to which clause (2) or clause (3)

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of this subsection would be applicable except for furnishing interstate mobile radio communication service or radio communication service to mobile stations on land vehicles in Canada or Mexico; except that sections 201-205 of this title shall, except as otherwise provided therein, apply to carriers described in clauses (2)-(4) of this subsection.

§ 153. Definitions

For the purposes of this chapter, unless the context otherwise requires—

* * * * *

(e) "Interstate communication" or "interstate transmission" means communication or transmission (1) from any State, Territory, or possession of the United States (other than the Canal Zone), or the District of Columbia, to any other State, Territory, or possession of the United States (other than the Canal Zone), or the District of Columbia, (2) from or to the United States to or from the Canal Zone, insofar as such communication or transmission takes place within the United States, or (3) between points within the United States but through a foreign country; but shall not, with respect to the provisions of subchapter II of this chapter (other than section 223 of this title), include wire or radio communication between points in the same State, Territory, or possession of the United States, or the District of Columbia, through any place outside thereof, if such communication is regulated by a State commission.

* * * * *

(h) "Common carrier" or "carrier" means any person engaged as a common carrier for hire, in interstate or foreign communication by wire or radio or in interstate or foreign radio transmission of energy, except where reference is made to common carriers not subject to this chapter; but a person engaged in radio broadcasting shall

not, insofar as such person is so engaged, be deemed a common carrier.

* * * * *

(l) "Mobile station" means a radio-communication station capable of being moved and which ordinarily does move.

(m) "Land station" means a station, other than a mobile station, used for radio communication with mobile stations.

(n) "Mobile service" means the radio-communication service carried on between mobile stations and land stations, and by mobile stations communicating among themselves.

* * * * *

TITLE II. COMMON CARRIERS

§ 201. Service and charges

(a) It shall be the duty of every common carrier engaged in interstate or foreign communication by wire or radio to furnish such communication service upon reasonable request therefor; and, in accordance with the orders of the Commission, in cases where the Commission, after opportunity for hearing, finds such action necessary or desirable in the public interest, to establish physical connections with other carriers, to establish through routes and charges applicable thereto and the divisions of such charges, and to establish and provide facilities and regulations for operating such through routes.

(b) All charges, practices, classifications, and regulations for and in connection with such communication service, shall be just and reasonable, and any such charge, practice, classification, or regulation that is unjust or unreasonable is declared to be unlawful: *Provided,* That communications by wire or radio subject to this chapter

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may be classified into day, night, repeated, unrepeated, letter, commercial, press, Government, and such other classes as the Commission may decide to be just and reasonable, and different charges may be made for the different classes of communications: *Provided further,* That nothing in this chapter or in any other provision of law shall be construed to prevent a common carrier subject to this chapter from entering into or operating under any contract with any common carrier not subject to this chapter, for the exchange of their services, if the Commission is of the opinion that such contract is not contrary to the public interest: *Provided further,* That nothing in this chapter or in any other provision of law shall prevent a common carrier subject to this chapter from furnishing reports of positions of ships at sea to newspapers of general circulation, either at a nominal charge or without charge, provided the name of such common carrier is displayed along with such ship position reports. The Commission may prescribe such rules and regulations as may be necessary in the public interest to carry out the provisions of this chapter.

§ 202. Discriminations and preferences

(a) It shall be unlawful for any common carrier to make any unjust or unreasonable discrimination in charges, practices, classifications, regulations, facilities, or services for or in connection with like communication service, directly or indirectly, by any means or device, or to make or give any undue or unreasonable preference or advantage to any particular person, class of persons, or locality, or to subject any particular person, class of persons, or locality to any undue or unreasonable prejudice or disadvantage.

(b) Charges or services, whenever referred to in this chapter include charges for, or services in connection with, the use of common carrier lines of communication, whether derived from wire or radio facilities, in chain broadcasting or incidental to radio communication of any kind.

(c) Any carrier who knowingly violates the provisions of this section shall forfeit to the United States the sum of $500 for each such offense and $25 for each and every day of the continuance of such offense.

* * * * *

§ 221. Telephone companies; consolidation; state jurisdiction over services, charges, etc., unaffected; determination of property used in interstate toll service; valuation

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(b) Subject to the provisions of section 301 of this title, nothing in this chapter shall be construed to apply, or to give the Commission jurisdiction, with respect to charges, classifications, practices, services, facilities, or regulations for or in connection with wire, mobile, or point-to-point radio telephone exchange service, or any combination thereof, even though a portion of such exchange service constitutes interstate or foreign communication, in any case where such matters are subject to regulation by a State commission or by local governmental authority.

* * * * *

TITLE III. SPECIAL PROVISIONS RELATING TO RADIO

§ 301. License for radio communication or transmission of energy

It is the purpose of this chapter, among other things, to maintain the control of the United States over all the channels of interstate and foreign radio transmission; and to provide for the use of such channels, but not the ownership thereof, by persons for limited periods of time, under licenses granted by Federal authority, and no such license shall be construed to create any right, beyond the terms, conditions, and periods of the license. No person shall use or operate any apparatus for the transmission of energy or communications or signals by radio (a) from one place in any Territory or possession of the United States or in

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the District of Columbia to another place in the same Territory, possession, or District; or (b) from any State, Territory, or possession of the United States, or from the District of Columbia to any other State, Territory, or possession of the United States; or (c) from any place in any State, Territory, or possession of the United States, or in the District of Columbia, to any place in any foreign country or to any vessel; or (d) within any State when the effects of such use extend beyond the borders of said State, or when interference is caused by such use or operation with the transmission of such energy, communications, or signals from within said State to any place beyond its borders, or from any place beyond its borders to any place within said State, or with the transmission or reception of such energy, communications, or signals from and/or to places beyond the borders of said State; or (e) upon any vessel or aircraft of the United States; or (f) upon any other mobile stations within the jurisdiction of the United States, except under and in accordance with this chapter and with a license in that behalf granted under the provisions of this chapter.

* * * * *

§ 303. Powers and duties of Commission

Except as otherwise provided in this chapter, the Commission from time to time, as public convenience, interest, or necessity requires, shall—

(a) Classify radio stations;

(b) Prescribe the nature of the service to be rendered by each class of licensed stations and each station within any class;

(c) Assign bands of frequencies to the various classes of stations, and assign frequencies for each individual station and determine the power which each station shall use and the time during which it may operate;

(d) Determine the location of classes of stations or individual stations;

(e) Regulate the kind of apparatus to be used with respect to its external effects and the purity and sharpness of the emissions from each station and from the apparatus therein;

(f) Make such regulations not inconsistent with law as it may deem necessary to prevent interference between stations and to carry out the provisions of this chapter: *Provided, however,* That changes in the frequencies, authorized power, or in the times of operation of any station, shall not be made without the consent of the station licensee unless, after a public hearing, the Commission shall determine that such changes will promote public convenience or interest or will serve public necessity, or the provisions of this chapter will be more fully complied with;

* * * * *

(r) Make such rules and regulations and prescribe such restrictions and conditions, not inconsistent with law, as may be necessary to carry out the provisions of this chapter, or any international radio or wire communications treaty or convention, or regulations annexed thereto, including any treaty or convention insofar as it relates to the use of radio, to which the United States is or may hereafter become a party.

* * * * *

§ 307. Licenses; allocation of facilities; terms; renewals.

(a) The Commission, if public convenience, interest, or necessity will be served thereby, subject to the limitations of this chapter, shall grant to any applicant therefor a station license provided for by this chapter.

(b) In considering applications for licenses, and modifications and renewals thereof, when and insofar as there is demand for the same, the Commission shall make such distribution of licenses, frequencies, hours of operation, and of power among the several States and communities

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as to provide a fair, efficient, and equitable distribution of radio service to each of the same.

(c) Omitted.

(d) No license granted for the operation of a broadcasting station shall be for a longer term than three years and no license so granted for any other class of station shall be for a longer term than five years, and any license granted may be revoked as hereinafter provided. Upon the expiration of any license, upon application therefor, a renewal of such license may be granted from time to time for a term of not to exceed three years in the case of broadcasting licenses, and not to exceed five years in the case of other licenses, if the Commission finds that public interest, convenience, and necessity would be served thereby. In order to expedite action on applications for renewal of broadcasting station licenses and in order to avoid needless expense to applicants for such renewals, the Commission shall not require any such applicant to file any information which previously has been furnished to the Commission or which is directly material to the considerations that affect the granting or denial of such application, but the Commission may require any new or additional facts it deems necessary to make its findings. Pending any hearing and final decision on such an application and the disposition of any petition for rehearing pursuant to section 405 of this title, the Commission shall continue such license in effect. Consistently with the foregoing provisions of this subsection, the commission may by rule prescribe the period or periods for which licenses shall be granted and renewed for particular classes of stations, but the commission may not adopt or follow any rule which would preclude it, in any case involving a station of a particular class, from granting or renewing a license for a shorter period than that prescribed for stations of such class if, in its judgment, public interest, convenience, or necessity would be served by such action.

(e) No renewal of an existing station license in the broadcast or the common carrier services shall be granted more than thirty days prior to the expiration of the original license.

§ 308. Same; application; conditions and restrictions in license for foreign communication.

(a) The Commission may grant construction permits and station licenses, or modifications or renewals thereof, only upon written application therefor received by it: *Provided,* That (1) in cases of emergency found by the Commission involving danger to life or property or due to damage to equipment, or (2) during a national emergency proclaimed by the President or declared by the Congress and during the continuance of any war in which the United States is engaged and when such action is necessary for the national defense or security or otherwise in furtherance of the war effort, or (3) in cases of emergency where the Commission finds, in the non-broadcast services, that it would not be feasible to secure renewal applications from existing licenses or otherwise to follow normal licensing procedure, the Commission may grant construction permits and station licenses, or modifications or renewals thereof, during the emergency so found by the Commission or during the continuance of any such national emergency or war, in such manner and upon such terms and conditions as the Commission shall by regulation prescribe, and without the filing of a formal application, but no authorization so granted shall continue in effect beyond the period of the emergency or war requiring it: *Provided further,* That the Commission may issue by cable, telegraph, or radio a permit for the operation of a station on a vessel of the United States at sea, effective in lieu of a license until said vessel shall return to a port of the continental United States.

(b) All applications for station licenses, or modifications or renewals thereof, shall set forth such facts as the

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Commission by regulation may prescribe as to the citizenship, character, and financial, technical, and other qualifications of the applicant to operate the station; the ownership and location of the proposed station and of the stations, if any, with which it is proposed to communicate; the frequencies and the power desired to be used; the hours of the day or other periods of time during which it is proposed to operate the station; the purposes for which the station is to be used; and such other information as it may require. The Commission, at any time after the filing of such original application and during the term of any such license, may require from an applicant or licensee further written statements of fact to enable it to determine whether such original application should be granted or denied or such license revoked. Such application and/or such statement of fact shall be signed by the applicant and/or licensee.

(c) The Commission in granting any license for a station intended or used for commercial communication between the United States or any Territory or possession, continental or insular, subject to the jurisdiction of the United States, and any foreign country, may impose any terms, conditions, or restrictions authorized to be imposed with respect to submarine-cable licenses by section 35 of this title.

§ 309. Application for license.

(a) Considerations in granting application.

Subject to the provisions of this section, the Commission shall determine, in the case of each application filed with it to which section 308 of this title applies, whether the public interest, convenience, and necessity will be served by the granting of such application, and, if the Commission, upon examination of such application and upon consideration of such other matters as the Commission may officially notice, shall find that public interest,

convenience, and necessity would be served by the granting thereof, it shall grant such application.

(b) Time of granting application.

Except as provided in subsection (c) of this section, no such application—

(1) for an instrument of authorization in the case of a station in the broadcasting or common carrier services, or

(2) for an instrument of authorization in the case of a station in any of the following categories:

(A) fixed point-to-point microwave stations (exclusive of control and relay stations used as integral parts of mobile radio systems),

(B) industrial radio positioning stations for which frequencies are assigned on an exclusive basis,

(C) aeronautical en route stations,

(D) aeronautical advisory stations,

(E) airdrome control stations,

(F) aeronautical fixed stations, and

(G) such other stations or classes of stations, not in the broadcasting or common carrier services, as the Commission shall by rule prescribe,

shall be granted by the Commission earlier than thirty days following issuance of public notice by the Commission of the acceptance for filing of such application or of any substantial amendment thereof.

(c) Applications not affected by subsection (b).

Subsection (b) of this section shall not apply—

(1) to any minor amendment of an application to which such subsection is applicable, or

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(2) to any application for—

(A) A minor change in the facilities of an authorized station,

(B) consent to an involuntary assignment or transfer under section 310(b) of this title or to an assignment or transfer thereunder which does not involve a substantial change in ownership or control,

(C) a license under section 319(c) of this title or, pending application for or grant of such license, any special or temporary authorization to permit interim operation to facilitate completion of authorized construction or to provide substantially the same service as would be authorized by such license,

(D) extension of time to complete construction of authorized facilities,

(E) an authorization of facilities for remote pickups, studio links and similar facilities for use in the operation of a broadcast station,

(F) authorizations pursuant to section 325(b) of this title where the programs to be transmitted are special events not of a continuing nature,

(G) a special temporary authorization for nonbroadcast operation not to exceed thirty days where no application for regular operation is contemplated to be filed or not to exceed sixty days pending the filing of an application for such regular operation, or

(H) an authorization under any of the proviso clauses of section 308(a) of this title.

(d) Petition to deny application; time; contests; reply; findings.

(1) Any party in interest may file with the Commission a petition to deny any application (whether as originally filed or as amended) to which subsection (b) of this sec-

tion applies at any time prior to the day of Commission grant thereof without hearing or the day of formal designation thereof for hearing; except that with respect to any classification of applications, the Commission from time to time by rule may specify a shorter period (no less than thirty days following the issuance of public notice by the Commission of the acceptance for filing of such application or of any substantial amendment thereof), which shorter period shall be reasonably related to the time when the applications would normally be reached for processing. The petitioner shall serve a copy of such petition on the applicant. The petition shall contain specific allegations of fact sufficient to show that the petitioner is a party in interest and that a grant of the application would be prima facie inconsistent with subsection (a) of this section. Such allegations of fact shall, except for those of which official notice may be taken, be supported by affidavit of a person or persons with personal knowledge thereof. The applicant shall be given the opportunity to file a reply in which allegations of fact or denials thereof shall similarly be supported by affidavit.

(2) If the Commission finds on the basis of the application, the pleadings filed, or other matters which it may officially notice that there are no substantial and material questions of fact and that a grant of the application would be consistent with subsection (a) of this section, it shall make the grant, deny the petition, and issue a concise statement of the reasons for denying the petition, which statement shall dispose of all substantial issues raised by the petition. If a substantial and material question of fact is presented or if the Commission for any reason is unable to find that grant of the application would be consistent with subsection (a) of this section, it shall proceed as provided in subsection (e) of this section.

(e) Hearings; intervention; evidence; burden of proof.

If, in the case of any application to which subsection (a)

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of this section applies, a substantial and material question of fact is presented or the Commission for any reason is unable to make the finding specified in such subsection, it shall formally designate the application for hearing on the ground or reasons then obtaining and shall forthwith notify the applicant and all other known parties in interest of such action and the grounds and reasons therefor, specifying with particularity the matters and things in issue but not including issues or requirements phrased generally. When the Commission has so designated an application for hearing, the parties in interest, if any, who are not notified by the Commission of such action may acquire the status of a party to the proceeding thereon by filing a petition for intervention showing the basis for their interest not more than thirty days after publication of the hearing issues or any substantial amendment thereto in the Federal Register. Any hearing subsequently held upon such application shall be a full hearing in which the applicant and all other parties in interest shall be permitted to participate. The burden of proceeding with the introduction of evidence and the burden of proof shall be upon the applicant, except that with respect to any issue presented by a petition to deny or a petition to enlarge the issues, such burdens shall be as determined by the Commission.

(f) Temporary authorization of emergency operations under subsection (b).

When an application subject to subsection (b) of this section has been filed, the Commission, notwithstanding the requirements of such subsection, may, if the grant of such application is otherwise authorized by law and if it finds that there are extraordinary circumstances requiring emergency operations in the public interest and that delay in the institution of such emergency operations would seriously prejudice the public interest, grant a temporary authorization, accompanied by a statement of its reasons therefor, to permit such emergency operations for a period not exceeding ninety days, and upon making like findings

may extend such temporary authorization for one additional period not to exceed ninety days. When any such grant of a temporary authorization is made, the Commission shall give expeditious treatment to any timely filed petition to deny such application and to any petition for rehearing of such grant filed under section 405 of this title.

(g) Classification of applications.

The Commission is authorized to adopt reasonable classifications of applications and amendments in order to effectuate the purposes of this section.

(h) Form and conditions of station licenses.

Such station licenses as the Commission may grant shall be in such general form as it may prescribe, but each license shall contain, in addition to other provisions, a statement of the following conditions to which such license shall be subject: (1) The station license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized therein; (2) neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of this chapter; (3) every license issued under this chapter shall be subject in terms to the right of use or control conferred by section 606 of this title.

* * * * *

§ 313. Application of antitrust laws to manufacture, sale and trade in radio apparatus—Revocation of licenses

(a) All laws of the United States relating to unlawful restraints and monopolies and to combinations, contracts, or agreements in restraint of trade are declared to be applicable to the manufacture and sale of and to trade in radio apparatus and devices entering into or affecting interstate or foreign commerce and to interstate or foreign radio communications. Whenever in any suit, action, or proceeding, civil or criminal, brought under the provisions

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of any of said laws or in any proceedings brought to enforce or to review findings and orders of the Federal Trade Commission or other governmental agency in respect of any matters as to which said Commission or other governmental agency is by law authorized to act, any licensee shall be found guilty of the violation of the provisions of such laws or any of them, the court, in addition to the penalties imposed by said laws, may adjudge, order, and/or decree that the license of such licensee shall, as of the date the decree or judgment becomes finally effective or as of such other date as the said decree shall fix, be revoked and that all rights under such license shall thereupon cease: *Provided, however,* That such licensee shall have the same right of appeal or review as is provided by law in respect of other decrees and judgments of said court.

Refusal of licenses and permits

(b) The Commission is hereby directed to refuse a station license and/or the permit hereinafter required for the construction of a station to any person (or to any person directly or indirectly controlled by such person) whose license has been revoked by a court under this section.

§ 314. Competition in commerce; preservation

After the effective date of this chapter no person engaged directly, or indirectly through any person directly or indirectly controlling or controlled by, or under direct or indirect common control with, such person, or through an agent, or otherwise, in the business of transmitting and/or receiving for hire energy, communications, or signals by radio in accordance with the terms of the license issued under this chapter, shall by purchase, lease, construction, or otherwise, directly or indirectly, acquire, own, control, or operate any cable or wire telegraph or telephone line or system between any place in any State, Territory, or possession of the United States or in the District

of Columbia, and any place in any foreign country, or shall acquire, own, or control any part of the stock or other capital share or any interest in the physical property and/or other assets of any such cable, wire, telegraph, or telephone line or system, if in either case the purpose is and/or the effect thereof may be to substantially lessen competition or to restrain commerce between any place in any State, Territory, or possession of the United States, or in the District of Columbia, and any place in any foreign country, or unlawfully to create monopoly in any line of commerce; nor shall any person engaged directly, or indirectly through any person directly or indirectly controlling or controlled by, or under direct or indirect common control with, such person, or through an agent, or otherwise, in the business of transmitting and/or receiving for hire messages by any cable, wire, telegraph, or telephone line or system (a) between any place in any State, Territory, or possession of the United States, or in the District of Columbia, and any place in any other State, Territory, or possession of the United States; or (b) between any place in any State, Territory, or possession of the United States, or the District of Columbia, and any place in any foreign country, by purchase, lease, construction, or otherwise, directly or indirectly acquire, own, control, or operate any station or the apparatus therein, or any system for transmitting and/or receiving radio communications or signals between any place in any State, Territory, or possession of the United States, or in the District of Columbia, and any place in any foreign country, or shall acquire, own, or control any part of the stock or other capital share of any interest in the physical property and/or other assets of any such radio station, apparatus, or system, if in either case the purpose is and/or the effect thereof may be to substantially lessen competition or to restrain commerce between any place in any State, Territory, or possession of the United States, or in the District of Columbia, and any place in any foreign coun-

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try, or unlawfully to create monopoly in any line of commerce.

* * * * *

§ 319. Construction permits; licenses for operation

(a) No license shall be issued under the authority of this chapter for the operation of any station the construction of which is begun or is continued after this chapter takes effect, unless a permit for its construction has been granted by the Commission. The application for a construction permit shall set forth such facts as the Commission by regulation may prescribe as to the citizenship, character, and the financial, technical, and other ability of the applicant to construct and operate the station, the ownership and location of the proposed station and of the station or stations with which it is proposed to communicate, the frequencies desired to be used, the hours of the day or other periods of time during which it is proposed to operate the station, the purpose for which the station is to be used, the type of transmitting apparatus to be used, the power to be used, the date upon which the station is expected to be completed and in operation, and such other information as the Commission may require. Such application shall be signed by the applicant.

(b) Such permit for construction shall show specifically the earliest and latest dates between which the actual operation of such station is expected to begin, and shall provide that said permit will be automatically forfeited if the station is not ready for operation within the time specified or within such further time as the Commission may allow, unless prevented by causes not under the control of the grantee.

(c) Upon the completion of any station for the construction or continued construction of which a permit has been granted, and upon it being made to appear to the Commission that all the terms, conditions, and obligations set forth in the application and permit have been fully met,

and that no cause or circumstance arising or first coming to the knowledge of the Commission since the granting of the permit would, in the judgment of the Commission, make the operation of such station against the public interest, the Commission shall issue a license to the lawful holder of said permit for the operation of said station. Said license shall conform generally to the terms of said permit. The provisions of section 309(a)-(g) of this title shall not apply with respect to any station license the issuance of which is provided for and governed by the provisions of this subsection.

(d) A permit for construction shall not be required for Government stations, amateur stations, or mobile stations. With respect to stations or classes of stations other than Government stations, amateur stations, mobile stations, and broadcasting stations, the Commission may waive the requirement of a permit for construction if it finds that the public interest, convenience, or necessity would be served thereby: *Provided, however,* That such waiver shall apply only to stations whose construction is begun subsequent to the effective date of the waiver. If the Commission finds that the public interest, convenience, and necessity would be served thereby, it may waive the requirement of a permit for construction of a station that is engaged solely in rebroadcasting television signals if such station was constructed on or before July 7, 1960.

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APPENDIX F

Administrative Procedure Act

5 U.S.C. § 551 *et seq.* (1970)

§ 706. Scope of review

To the extent necessary to decision and when presented, the reviewing court shall decide all relevant questions of law, interpret constitutional and statutory provisions, and determine the meaning or applicability of the terms of an agency action. The reviewing court shall—

(1) compel agency action unlawfully withheld or unreasonably delayed; and

(2) hold unlawful and set aside agency action, findings, and conclusions found to be—

(A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;

(B) contrary to constitutional right, power, privilege, or immunity;

(C) in excess of statutory jurisdiction, authority, or limitations, or short of statutory right;

(D) without observance of procedure required by law;

(E) unsupported by substantial evidence in a case subject to sections 556 and 557 of this title or otherwise reviewed on the record of an agency hearing provided by statute; or

(F) unwarranted by the facts to the extent that the facts are subject to trial de novo by the reviewing court.

In making the foregoing determinations, the court shall review the whole record or those parts of it cited by a party, and due account shall be taken of the rule of prejudicial error.